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Textile World

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Thorp Centenary Only One of Many Interesting N. A. C. M. Convention Features

Robert Amory Unveiled Thorp Memorial Tablet— Ably Conducted and Largely Attended Meetings

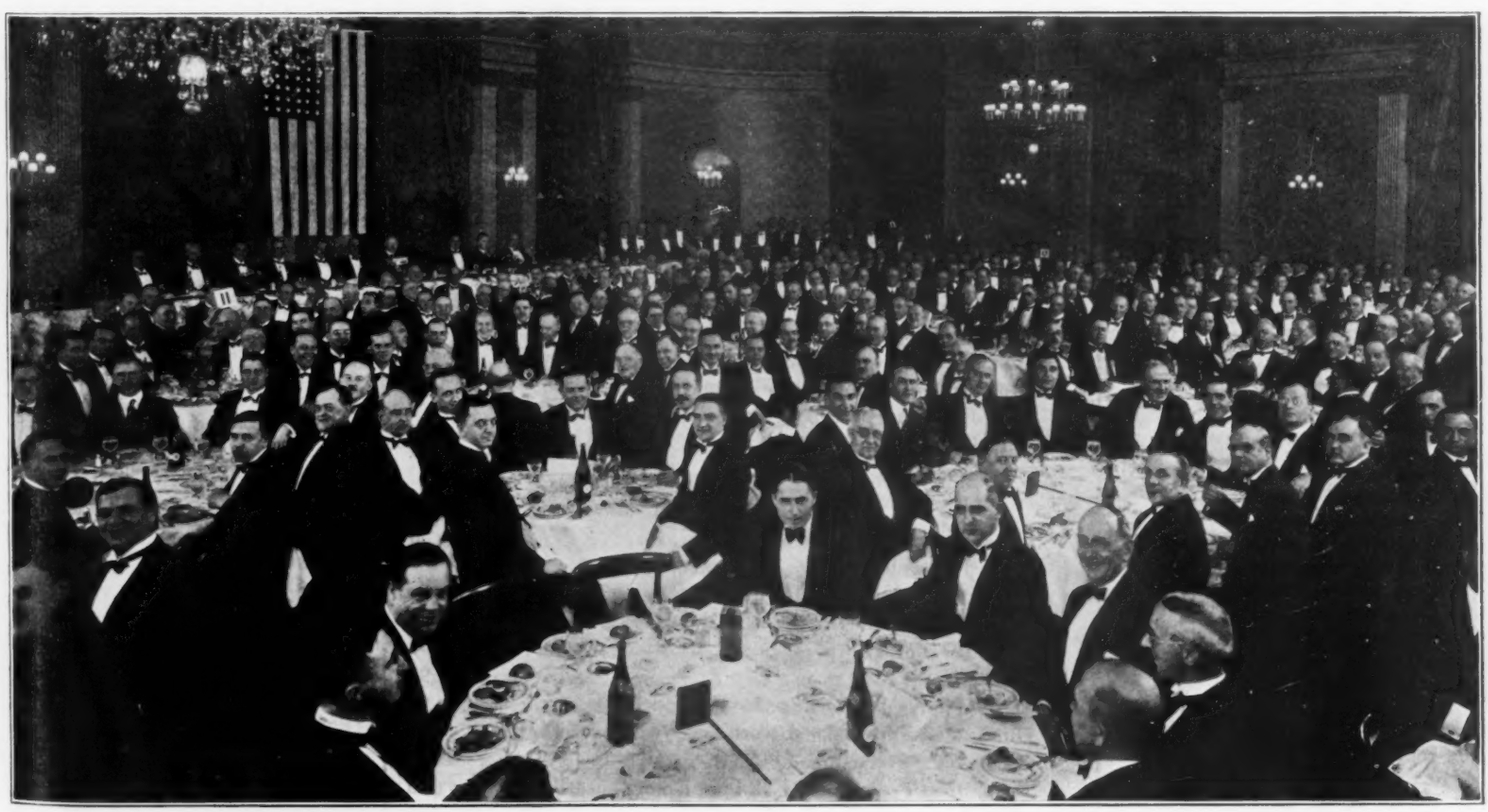
THE centenary of the invention of ring spinning by John Thorp of Providence was the magnet that drew the National Association of Cotton Manufacturers to that city for its semi-annual meeting, April 25 and 26, and, although there was only one session devoted to the celebration of the Thorp centenary, and that at the Old Slater Mill Thursday morning, it was the outstanding feature of the convention. Prior to that meeting nothing had been known of Thorp excepting patent office records of his inventions, but at the exercises at the Old Slater Mill his biographer, Charles H. Clark, Editor of TEXTILE WORLD, definitely established his lineage and proved that he was a 100-per-cent American. It is claimed by Mr. Clark that, with the possible exception of the drafting rolls, variously credited to Wyatt, Paul and Arkwright, Thorp's spinning ring and traveler were the most novel contributions to the art of spinning during the transition from hand to machine manufacture, and that because of this and the fact that over 100 million, of the approximately 160 million cotton spinning spindles in the world today, are ring spindles, John Thorp deserves to rank with the greatest of the pioneer textile inventors.

Sponsored by So. N. E. Textile Club

The Thorp celebration, as well as the smoker at the Hotel Biltmore Wednesday evening, were sponsored by the Southern New England Textile Club, and Henry C. Dexter, a former president of that organization, was chairman of the committee of arrangements for the former, and it is also worthy of note that it was largely through his efforts that the Old Slater Mill, the first successful cotton mill in the country, has been preserved and will become a museum for the industry. The final feature of the centenary exercises was the dedication by Robert Amory, former president of the National Association of Cotton Manufacturers, of a bronze tablet in honor of John Thorp, presented to the Old Slater Mill Association by the National Association and set in the wall of the mill at the left of the main entrance.

Large Attendance at Sessions

The Thorp exercises, the smoker Wednesday evening and the banquet that closed the convention on Thurs-



National Association of Cotton Manufacturers Assembled at Banquet, Providence-Biltmore Hotel, Providence, R. I., April 26, 1928

day evening attracted the largest attendances, over 500 members and guests being present at the two latter and the programs being of unusual excellence; but the regular sessions on Wednesday and Thursday afternoons, which were held in the foyer

From a Daguerreotype Believed by Relatives to be that of John Thorp

of the Biltmore ball-room also attracted and held audiences much larger than usual, approximating in both cases about 300. The Wednesday afternoon session was presided over by John L. Burton, agent of the Nashawena Mills, New Bedford, Mass., and was devoted to the presentation and discussion of practical mill problems, including the opening and cleaning of cotton, moisture in cotton and anti-friction spindle bearings. This session and the convention were formally opened by President G. Edward Buxton and the meeting was then turned over to Chairman Burton.

The afternoon session on Thursday, which was devoted to advertising in its special application to the cotton industry, was presided over by Aldrich Taylor, sales promotion manager of the Pacific Mills, New York City, and the subjects of daily paper, outdoor and specialty, and magazine advertising were discussed by experts in those particular fields. Owing to the interpolation of other matters at this session the time was so late when the last address was finished that there was no opportunity for discussion; however, the subjects were covered in such a complete manner by the speakers that, while many questions might have been asked if there had been time, it is doubtful if much would have been added to the points discussed.

Protest McNary-Haughen Bill

The only resolution introduced at the convention was presented at this session by former president Robert Amory on behalf of the Board of Government, and emphasized the serious, if not disastrous, effect upon the cotton manufacturing and other branches of the textile industry of the equalization fee plan of the McNary-Haughen bill, and, upon the assumption that the bill might be considered favorably by Congress and the administration, the resolution suggested that an amendment should be offered by which the textile industry, whose interests are very closely related to the farmer, would participate in the equalization fee plan as do the millers, packers, and certain other important customers of the farmer. The following committee, to bring the resolution and the situation to the attention of members of the National House and Senate, was appointed by President Buxton: Former Presidents Robert Amory and W. B. MacColl, and Vice-President Philip Dana.

The Convention Banquet

The banquet, which brought the convention to a close Thursday evening, overtaxed the capacity of the Hotel Biltmore's ball-room, and a large number of those in attendance had to be served in the foyer, but were provided with seats for the speaking program. President G. Edward Buxton presided in his usual felicitous manner, and the principal speaker was President Walker D. Hines of The Cotton-Textile Institute, who emphasized the value to the industry of the sectional organizations of the Institute, made a strong plea for more general cooperation of both northern and southern mills, and announced that standardized costing methods that had been worked out by the Institute and endorsed by independent accountants and cost specialists, would soon be made available to members. Gov. Norman S. Case of Rhode Island was the first speaker and welcomed the association on behalf of the State in an interesting address, while Mayor James E. Dunne spoke briefly in similar vein on behalf of the city. The last speaker was president George S. Harris of the American Cotton Manufacturers Association who brought the greetings of that organization. Mr. Harris took

Bronze Tablet to Thorp Unveiled by Robert Amory

occasion to endorse the resolution against the McNary-Haughen bill as adopted at the afternoon session, and gave assurance that a similar resolution would be presented to the governing board of his association with every prospect of similar action.

Smoker and Other Features

"One of the best conventions ever," probably sums up the satisfaction of the majority who attended the various sessions and functions of this, the 124th, meeting of the association. Possibly one of the reasons that contributed so effectively to the instruction and entertainment of members and guests was the fact that responsibility for each session and each important feature of the arrangements was delegated to separate committees. There was a general staff headed by President G. Edward Buxton as chairman, William B. MacColl as vice-chairman and Russell T. Fisher as secretary but, with the exception of Secretary Fisher, upon whom devolved the specific duty of arranging the programs for the so-called business sessions and the banquet, and of checking up the work of the individual committees, it was to the latter that the balance of credit belongs for the success of the convention. It was not exactly a case of what decentralized control may perform when given full sway, for all of the other committees were made up of members of the Southern New England Textile Club and they worked in complete, if not in close harmony.

The smoker committee consisted of Philip C. Wentworth, chairman, Wilfred C. Murphy and W. S. Pepperell. The entertainment that they staged on the first night of the convention was one of the most elaborate and entertaining that has ever been put on at any textile convention and must have made a deep hole in the funds of the finance committee, the latter consisting of Frederic W. Howe, chairman, A. W. Dimick and E. Russell Richardson. The finance committee, which drew its funds largely from the New England machinery and supply firms, also footed the bills for the excellent buffet luncheon served at the Old Slater Mill following the Thorp centenary exercises, transportation to and from that function, and for the handsome bronze tablet inscribed to the memory of John Thorp. Furthermore, they provided the handsome banquet programs and the floral decorations for that function, and stood ready to underwrite a deficit for the banquet had it been necessary. The banquet committee consisted of John F. Reardon, president of the Southern New England Textile Club, as chairman, and Richard C. Watrous, secretary of the Providence Chamber of Commerce.

Henry C. Dexter was chairman of the Thorp centenary committee, and he had as his aids Benjamin C. Chase, general manager of the Crown Mfg. Co., Pawtucket, R. I., and Frederic L. Chase, of F. A. Chase & Co., Providence. All of the arrangements for the Thorp exercises at the old Slater Mill devolved upon this committee, including the program, the buffet luncheon and the designing of the Thorp memorial tablet. The very effective manner in which they performed their duties, barring the wintry temperature of the mill which was beyond their control, was attested to by all who participated in this pilgrimage from Providence to Pawtucket. Credit for the excellent transportation facilities provided goes to Alexander S. West, who was chairman of the committee having these in charge.

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Dr. Weidlein Speaks on the Value of Fundamental Research to Industry

Director of the Mellon Institute Addresses Research Council—Notable Attendance at Providence Meeting

THAT a new rayon is being developed by European chemists that has a strength equal to silk and that is as unaffected as the latter by finishing and laundering processes, and that a moth-proofing process for textiles has been developed at the Mellon Institute and is almost ready for the market, were among the interesting results of fundamental and applied research that were mentioned by Dr. E. R. Weidlein, director of the Mellon Institute of Industrial Research, Pittsburgh, Pa., during his address and the following discussion at the semi-annual meeting of the Textile Research Council at the Biltmore Hotel, Providence, R. I., April 25.

Dr. Weidlein's subject was "The Value of Fundamental Research to Industry," and it was based in part upon what he saw of research work in Europe on a trip last fall, but more largely upon developments in this country, particularly at the Mellon Institute. Both in his address and in the later discussion he emphasized particularly the need of avoiding duplication in research work, and the absolute necessity of the research worker and the practical man in industry cooperating wholeheartedly if research is to be most successful and profitable.

Vice-president, W. F. Edwards, director of laboratories at the U. S. Testing Co., Inc., New York City, presided in the absence of president George L. Gilmore, and in addition to a large attendance of members the Council had as its guests the following: Col. G. Edward Buxton, president, Philip Dana, vice-president, William B. MacColl, former president, and Russell T. Fisher, secretary of the National Association of Cotton Manufacturers; Horace Cheney of Cheney Bros., South Manchester, Conn., representing the Silk Association of America; E. T. Pickard, Chief, Textile Section, Department of Commerce; Peter Strang, Cotton Technologist, Department of Agriculture, Washington, D. C.

Dr. Weidlein's Address

In opening his address Dr. Weidlein spoke as follows:

"Recently several research directors were looking over a carefully prepared list of noted inventions, American and foreign, fifty-five in number, and selected because of their economic value. Of these inventions, twelve were chemical products, ten related to chemical processes, while the remainder were plainly in the domain of physics and engineering. Inquiry revealed the interesting fact that all these great inventions had been made by the application of scientific knowledge through the medium of experimentation. It made clear the impression that scientists are the vanguard of civilization. By their discoveries, they supply to the engineer and other specialists the raw material to be elaborated into manifold agencies for the improvement of the conditions of mankind.

"Science is definable as the accurate knowledge of observed facts and their causes. Research is the effort to obtain knowledge; science, the knowledge obtained. The application of this knowledge is the principal mode for securing human efficiency.

"Industry, in its essential sense, is merely the changing of some raw material, some resource of nature, into a form in which mankind can use it. Industrial research, in its widest application, is simply the means of making that process of change as efficient as possible."

High Lights of Address

Some of the high lights of the balance of Dr. Weidlein's address are contained in the following paragraphs:

"In the past, those devoted to pure research encouraged the impression that pure science, 'a sort of preserve for intellectual sportsmen,' was esoteric and distinctly apart from the ordinary affairs of life, and made no effort to disclaim the implication that pure scientists necessarily brought t› their inquires a higher and subtler intellect than those who were engaged in applying science to the needs of the community. This adopted aloofness and lack of sympathy with respect to industrial practice have undoubtedly retarded the solution of a number of the great problems of both chemical and physical technology, and have, moreover, acted as a barrier to needed cooperative effort.

Research Co-operation Necessary

"While pure science ever has been, and ever must be, the safeguard of industrial research—the wellspring of experience and widsom—it is generally conceded that the industrial investigator always will be the translator of the language of pure science to the manufacturing world, and, in many cases, where necessity arises, the originator as well as the applicator of scientific method. Both pure and applied research are of the same order of importance and each has its own related field.

"Research cooperation reduces to a minimum the period represented by time elapsed from the discovery of a principle in science to mass production. The electrical industry, which is based upon the pure science research of Michael Faraday, required nearly a hundred years for its development. Compare with that the development of the radio industry or any of our other modern branches of manufacture during this period of better understanding of cooperation between the pure science research worker, the industrial scientist, and the industrialist.

Development of Phenol Resins

"One of the most important parts of radio equipment is a chemical product known as "bakelite" or "redmanol," which is manufactured from two

Backrach

Dr. Edward R. Weidlein, Director, Mellon Institute, Who Spoke Before Textile Research Council

common substances, namely, carbolic acid and formaldehyde. Mellon Institute has had an active part in evolving the technology of "redmanol." Beginning with the discovery of a proper method of controlling the production of these phenol resins, their subsequent hardening under heat and pressure, and their increased strength when fillers are used, particularly fibrous fillers, all this has made possible the application of phenol resins in technology in the widest and most varied manner. The accuracy of dimensions with which these phenol resins can be molded and their permanence of shape under elevated temperatures, such as one gets under an automobile hood, has made their application very extensive in the automobile industry.

Source of Revolutionary Invention

"The growth of invention, is one indication that a nation is becoming better served with the essentials of economic progress, one of which is industrial research. Most of the notable inventions are the products of organized work in research laboratories, where physical and chemical specialists are employed solely to find new materials, new processes, and new uses of products, for industrial development. The most revolutionary inventions have been those in the fields of electricity and chemistry.

"The motor-car industry not only has taken full advantage of the possibilities of its own research organizations, but its spectacular expansion has given impetus to other classes of industrial research, such as petroleum products, rubber, metals, leather, synthetic fabrics and compounds, as well as road materials.

Paint Industry and Research

"How many people realize that the automobile has completely revolutionized the paint and varnish industry, due to the requirements for a better finish and one which can be applied in a short period of time? The result is the manufacture of nitrocellulose lacquers, and the development of new synthetic gums and solvents. This, in turn, has created two entirely new industries within the last ten years. One of these industries is located in the corn-belt area of Indiana and Illinois. Through scientific research in the field of biochemistry, the corn is treated with a new type of micro-organism which produces these necessary lacquer solvents instead of the familiar pre-prohibition solvent, ethyl alcohol.

"The second of these industries depends upon the common product natural gas for its source of raw material. This industry is especially close to us, as it originated and was matured into adolescence in the laboratories of Mellon Institute. The results of this research have made available in large quantity and at low cost a variety of commercially valuable organic chemicals, distinct in origin as well as in application from the synthetic chemical products heretofore generally known. A principal product of these efforts is ethylene glycol, which has come into commerce for the first time, after having been known since the early days of chemistry only as a curiosity. Ethylene glycol is now widely used in explosives manufacture and as an anti-freeze material for automotive engines; it is also finding numerous new uses to supplement the inadequate supplies of glycerin and is further serving purposes entirely new in the arts. The ethers of glycol are ideal solvents for nitro-cellulose lacquers and in the rapidly expanding lacquer

industry they are introducing qualities indispensible in their nature.

Research Builds New Industries

"The electric illumination, radio, electro-chemical and telephone industries have been developed from their basic inventions to important places in our present industrial organization in a period of less than fifty years. In each there is striking evidence of the inter-relation of the 'cycle of research' with the various stages in the evolution of the industry. It is significant that the time lag in the development of these industries has been greatly reduced by systematic scientific research. What happens when research is undertaken in older industries—in the iron and steel industries, for example, which are of the oldest in recorded history? The steel industry for hundreds if not thousands of years was an art, and yet within less than fifty years it has felt the influence of research and has experienced a greater development in that period of five decades than all the centuries that went before.

European Research Problems

"The problems that are now receiving the most attention in Europe as well as in the United States are the fixation of nitrogen, coal liquefaction, gas supply, dyestuffs, synthetic organic chemicals, principally solvents, and textiles, including artificial silk. In Europe most of these problems are related to and depend upon coal or lignite as a raw material. From coal can be made synthetic ethyl alcohol, methyl alcohol, other organic solvents, and hydrogen for use in the nitrogen fixation process for the manufacture of ammonia, besides dyes, medicinal products, motor fuels, and fertilizers.

Value of Scientific Co-operation

"Europe realizes that scientific co-operation is the most powerful means of dealing with many of the economic difficulties with which it is faced today, and the surest means of self-protection and preservation. This is also regarded as true in all well-organized business enterprises of today. The aim of business is profit, and hence it is essential to operate plants with gain. In consequence of this recognition in industry, incumbrances that interfere with advantageous production must be discarded. Waste, inefficiency, senile processes, antiquated plants, and unscientific practices in general are the foes of profitable operation. Effective intelligence service on market conditions, both foreign and domestic, and adequate technical research on plant production problems are the agencies upon which the dynamic, successful business of today is most dependent.

It has become a truism to say that scientific research has exercised a profound influence on industry, particularly upon the character and direction of manufacturing methods. It is equally true that industry has had a great influence upon scientific research. By providing opportunities, industry has led to the improvement and extension of research procedure."

New Bedford Mill Strike

Organizers Advise Workers to Wear Cotton, Not Silk

New Bedford, Mass.

THE strike of operatives in cotton mills affiliated with the New Bedford Cotton Manufacturers' Association is nearing the end of the third week, with little change in the situation from that obtaining on April 16, when the group of mills closed down shortly after the gates had been opened up to receive such of the workers as cared to report for work.

Approximately 25,000 operatives are affected, of which it is estimated about 8,000 are organized and members of the various unions that go to make up the Textile Council, affiliated with the American Federation of Textile Operatives. So far, the workers have not felt the need of assistance, as they had pay coming to them last week. This week, the seven locals started distribution of strike pay, and in behalf of the unorganized workers, the New Bedford Relief Committee has been created, with Alderman T. Harry Margeson as president, and a number of businessmen and clergy as members of the various working committees.

The strikers have held a number of mass meetings, at which the labor leaders have stressed the necessity for solidarity in the ranks, and calling for 100% unionization of the textile workers. At one of these meetings, Samuel Ross, secretary of the Mule Spinners Union, and a member of the State Board of Conciliation and Arbitration, said in part:

"I'm not here to tell you what I think will please you. In the first place, when you say you're not to blame for the strike, you're wrong. You are to blame, and so are the manufacturers. The great number of you still unorganized is to blame. If every one of you had belonged to the unions of your crafts, you would have presented so strong an appearance that there would have been no cut in wages.

"I don't want anybody to go around thinking the manufacturers and the unions will not confer. That is incorrect. Both sides have their committees for that purpose, and both are willing to go into a conference with each other any time that it seems desirable. It has been shown in the past, however, that premature conferences have brought forth exchanges that were unpleasant, and nothing has been accomplished. Wisdom dictates that conferences should be called with a purpose, and when a constructive theory is found to work on, the conference can be arranged very quickly."

Mr. Ross also advised the girls to wear cotton rather than silk. "Don't you see that unless you buy the material you make yourselves you are not true to yourselves nor true to your industry?" admonished Mr. Ross. "Not only that, but every time a mill changes from the manufacture of cotton goods to that of rayon, it means elimination of departments such as the ring and card rooms.

William E. G. Batty, secretary of the Textile Council, scorned the suggestion that privation would force breaks in the union lines, asserting that the strike benefits would amount to as much as some of the operatives had been receiving in wages, owing to working but one or two days a week.

The Board of Public Welfare reports many appeals for aid. "Some of the people asking for help admitted that they received their pay only last Friday," said Secretary Charles A. Poirier. "They said the money had gone for rent and insurance."

The Textile Council is presenting a series of formal statements in support of its position in the strike against the announced 10% cut.

A clash between rival labor leaders, happening last Tuesday morning outside the gates of the Wamsutta Mills, has so far been the only disturbance in the strike.

The police also reported that the striking group held the Wamsutta's gates closed, keeping executives and others waiting in their machines in the streets until the arrival of the police emergency squads.

A proposal made by President Thomas F. McMahon of the United Textile Workers for New Bedford strikers to become members of the U. T. W. so that they can get the support of the American Federation of Labor, has not yet been acted on by the Textile Council of New Bedford. Most of the unionized operatives in New Bedford are affiliated with the American Federation of Textile Operatives, an organization that broke away from the A. F. of L. some years ago when a difference cropped up relative to per capita tax.

Second Week of Strike Pay

This week is the second week for strike pay to be distributed to the members of the seven locals that make up the Textile Council, the pay ranging from $3 to $10 for each person in good standing. Owing to many of the operatives having had short time pay during the last year, a number of them had fallen behind in their dues and are thus out of benefits.

The general strike committee of the textile unions have issued a number of articles showing the workers' side of the situation, dealing largely with balance sheets of the respective mills, stressing the earnings made last year by the corporations that managed to make a profit. The articles so far have made no mention of the fact that New Bedford mill shares generally are at the lowest point they have ever known, which from a manufacturing standpoint ought to be sufficient answer as to the present condition of the cotton manufacturing industry.

Antonio Spencer's Friends Help Him Celebrate His 75th Birthday

A large party of friends of Antonio Spencer, of the U. S. Ring Traveler Co., Providence, R. I., and the Haskell Boat Co., Pawtucket, R. I., helped him celebrate his 75th birthday at the Narragansett Hotel, Providence, the evening of April 24. J. F. Morrissey, agent of the Interlaken Mills, Providence, acted as toastmaster and Forrest Boyd, sales manager of the Nyanza Mills, Woonsocket, R. I., was master of ceremonies and presented Mr. Spencer with a beautiful silver shaker. In accepting the gift Mr. Spencer promised to dedicate it to the Dixon-Spencer Associates.

Among the principal speakers were Senator Ezra Dixon, of the Dixon Lubricating Saddle Co., Bristol, R. I., and Charles D. McEvoy, vice president and general manager of the Passaic (N. J.) Worsted Spinning Co., and formerly of Providence, R. I. All of the others present, however, extended their congratulations to the guest of the evening. It was noted with some interest by those present that five years ago, when a large dinner was given to Mr. Spencer in honor of his 70th birthday, the National Association of Cotton Manufacturers held their convention in Providence, and that for the second time the latter association was holding its convention again in that city.

Fare Reductions to Southern Textile Exposition

The president of the Southern Textile Exposition at Greenville, S. C., has received a letter under date of April 23 from W. H. Howard, chairman, Southeastern Passenger Association, announcing that special rates of one and one-half fares for the round trip, open to the public, have been authorized in the territory south of the Potomac and east of the Mississippi Rivers. Tickets will be sold from Oct. 13 to 19 inclusive. Also on Oct. 20 from stations and for trains of that date which are scheduled to arrive in Greenville on or before noon, with a final limit of Oct. 23. The above is of interest to those planning to attend the Southern Textile Exhibition and Association meeting at Greenville, Oct. 15-20.

A. S. M. E. Textile Meeting in Boston, May 22

The first national meeting of the Textile Division of the American Society of Mechanical Engineers will be held at the Statler Hotel, Boston, May 22, through the courtesy of and in conjunction with the Boston Section of the A. S. M. E. Three excellent papers will be presented at the morning session by well-known authorities in the textile field. A plant inspection tour is planned for the afternoon. At the dinner in the evening there will be three speakers representing the selling, manufacturing and engineering phases of the cotton goods manufacturing industry.

THE TEXTILE OUTLOOK

Small Chance of Sustained Rise in Cotton Goods; Favorable Weather Will Bring Cotton Reaction, Says Dr. L. H. Haney

OF late the cotton market appears to have been affected somewhat by inflationary influences such as have been prominent in the stock market. There has been a highly speculative advance, in which public participation has become prominent. The only important basis for the advance has been unfavorable weather conditions. Such conditions may become serious, but it is a little early to kill the crop yet. Cotton at nearly 22c seems to us to have gone too far in discounting remote possibilities and the market is likely to suffer a sharp reaction.

The textile situation is in a transitional condition. Curtailment has made considerable progress, the idea being to reduce the supply of textiles, at the same time reducing the demand for raw cotton, and thus to increase the spread between the cost of the raw material and the price of the finished product. Nevertheless, cotton manufacturers' replacement margins declined considerably in April, for the speculative advance in cotton prices found relatively little expression in the textile markets. Thus the curtailment program has at this writing shown no results that can be measured statistically. Of course, higher raw cotton may induce some covering purchases of textiles but that would not give a secure basis for prosperity in the industry. The whole situation is highly uncertain, resting on a gamble as to the new crop prospects as opposed to the known facts concerning an ample supply for the current season and a depressed textile industry.

Bull Points

The bullish factors affecting cotton prices are as follows:

(1) ***New crop developments are unfavorable.*** Drouth conditions continue in West Texas at the same time that there has been excessive precipitation in most of the belt. This has delayed field work and will necessitate much replanting. Seed and fertilizer have been washed out in large quantities and good planting seed has become scarce and high priced. ***As a result, the possibilities are both that the crop will be a little late and that the anticipated increase in acreage will be reduced.*** To the extent, too, that fertilizer is lost and poor seed used, the yield per acre will be affected.

(2) Some increase in European buying is reported, though this may be but temporary as it appears to be chiefly attributable to fears concerning the new crop.

(3) Mill stocks are small in comparison with consumption and any increase in manufacturing activity might bring a rush of buying.

Textile World Analyst

The analysis and forecast by Dr. Lewis H. Haney, Director, New York University, Business Research Bureau, which regularly appears on this page, considers various branches of the textile industry from week to week. The conclusions reached in the Analyst are mostly forecasts and generally apply to a time two or three months ahead. The Analyst is based on statistical data and does not reflect temporary trade sentiment.

SUMMARY—COTTON

1. Under the influence of unfavorable weather and increased speculation cotton was advanced above the 21c level, but is not supported by demand and is likely to fall below 20c on favorable weather conditions.

2. Yarns and gray goods exist in excess supply and the lowness of the manufacturers' margins shows the weakness of demand. No sustained advances in price are probable, except possibly a backward and inadequate response to higher raw cotton (in the event that crop conditions do not improve).

(4) ***The unfilled orders for cloth have increased a little.***

(5) Reports of increased speculation in cotton, with public participation, make it possible that further advances in the market may be scored. The new crop futures are relatively high.

Bear Points

On the other hand, the same conditions that have all along tended to hold cotton prices down are still operating, as follows:

(1) Some increase in acreage is probable, and the use of fertilizers is perhaps as much as one-third greater than last year. The higher prices now prevailing will tend to increase production. Nor is there any conclusive evidence of extraordinary weevil developments. A run of favorable weather would put a very different face on the market.

(2) ***Exports continue small*** and the English cotton trade dull and depressed. Even when better inquiries are reported, the prices are too low.

(3) ***The curtailment program, strengthened by the strike in New Bedford, is reducing mill consumption.*** The New Bedford strike affects over two and one-half million spindles and materially reduces the demand, particularly for long staple cotton. Fine yarn mills in the south are on short time and report business to be very dull.

(4) Knitting mills are reported to be curtailing their purchase of yarn.

(5) The tire manufacturing companies, which have been an important source of demand, appear to be curtailing.

(6) Spindle activity in March was still excessive as judged by the demand for yarn.

(7) ***Manufacturers' margins have declined further and are very low.*** Raw cotton has advanced more than 5c during the year, while plain fine goods are up only about 1c and gray goods not much more than 2½c.

(8) Stocks of standard cotton cloth have increased, sales and shipments being less than production in March. The sales of New York cotton jobbers decreased more than usual in that month.

The plain fact is that demand for cotton textiles continues weak in comparison with the supply and the condition is so deep seated that it is not now likely that a run-up in the raw cotton market will produce any sustained improvement in the demand for textiles.

Statistical Position.

There is little new to add with reference to the statistical position. The total supply available in the United States at the end of March was 5,908,000 bales, which makes an average of 1,477,000 bales per month during the balance of the season. These figures are considerably lower than in the preceding two seasons, but are also considerably larger than in 1924-25. ***Unless a good sized crop is to be made this year,***

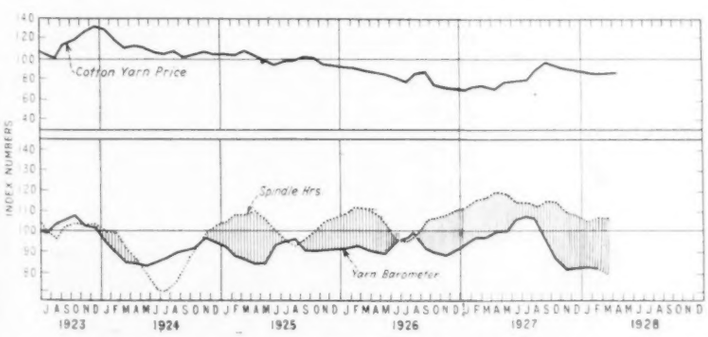

Cotton Yarn Price
Spindle Hrs.
Yarn Barometer
INDEX NUMBERS
J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D
1923
1924
1925
1926
1927
1928

Fig. 1. COTTON YARN BAROMETER—Cotton Yarn Price—TEXTILE WORLD Index. Spindle Hours—Three-month moving average (Dept. of Commerce). Yarn Barometer—Based on orders for cotton cloth. Average of recent years = 100 for all indexes.

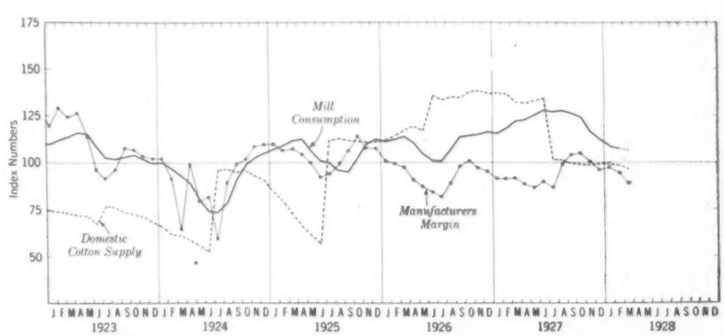

Mill Consumption
Manufacturers Margin
Domestic Cotton Supply
Index Numbers
175
150
125
100
75
50
J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D
1923
1924
1925
1926
1927
1928

Fig. 2. GENERAL COTTON BAROMETER: Consumption—Average Daily, Adjusted for Seasonal Variation, three-month moving average; Manufacturers' Margin—Average of Replacement Margins; Average Monthly Available—Net Domestic Available for Crop Year Adjusted for Seasonal Variation. 1921–1926 = 100 for all indexes.

the supply situation is strong and would suggest prices of about 20c for middling spot cotton at New York.

The total distribution for the season through March amounts to 10,622,000 bales, out of a supply amounting to 16,531,000 bales. The domestic consumption and net exports run about 3,000,000 bales behind last year. We estimate the domestic consumption for the season at about 7,000,000 bales and exports will be little, if any, larger. Perhaps the total distribution for the season will amount to 14¼ million bales, but it is to be remembered that the higher prices now prevailing are likely to reduce exports. This would make the probable carry-over about 2¼ million bales.

Of course, this supply, though ample, is very moderate, and the situation is, therefore, more sensitive to the outlook for the new crop than if the carry-over were larger. But the unfavorable textile situation continues and a run of good weather in the belt will be just as effective on the bear side as the recent unfavorable weather has been on the bull side. No one can forecast the weather and about all that can be said is that favorable developments in this respect would probably bring cotton down below 20c again.

Cotton Supply Ample for Current Demand

Domestic mill consumption resumed its downward trend in March and, considering the season, reached the lowest point since August, 1926. ***This represents a decline from the peak reached last June of about 19%;*** that is, in March the mills were operating at an annual rate of about 19% lower than they were in the middle of last year, as judged by consumption. This rate, though still above the average of recent years, is probably below any "normal" level that might be figured, making due allowance for the annual rate of growth in the requirements for the country.

Nor is any early upward turn in mill consumption probable. ***Manufacturers' replacement margins are too low and show too much of a tendency to go lower still, to encourage increased activity.*** As shown in the chart, such margins in March fell back to about the same low level as in the first half of 1927. They were below the average of recent years and so much below a profitable level that they are bound to support the curtailment movement. Certainly no support for higher raw cotton is to be found on the demand side of textiles.

The least bearish factor, as illustrated by the chart, is found on the supply side. It appears that the domestic supply available for the remainder of the season was slightly lower at the end of March than it was a month before and is the lowest since the early part of 1925. It is still relatively low compared with mill consumption. Even so, however, the supply is nearly equal to the average of recent years and, leaving new crop prospects out of consideration, may be called comfortable. Compared with consumption it is not nearly so low as in the first half of 1925. Of course, a further decline in consumption would make the situation easier still.

A study of this basic chart shows that the problem of the cotton market is to balance a moderate supply, that would justify a price of between 19 and 20 cents, with a weak demand as reflected in the declining consumption and low manufacturers' margins. Aside from new crop prospects, an early decline from the 22c level would be indicated. As the new crop becomes more of a factor, the situation becomes more speculative and difficult to anticipate, but any early improvement in weather conditions would probably bring a sharp reaction.

Yarn Price Outlook

Yarn prices are clearly sustained only by the advance in raw cotton. The average for April was slightly higher, due to a rise in the price of certain descriptions of yarn during the last week or two of the month. Trade reports mostly agree that the yarn business continues very dull both here and in England. ***Spindle activity, allowing for the merely seasonal changes, is nearly 30% lower than it was in the middle of 1927, but even so it was in March still above requirements.*** It was high in comparison with the orders for gray yardage, and stocks of carded sales yarns increased. The curtailment of fine goods production is bound to reduce the requirements for combed yarns. Spinners' margins are on the down-grade. ***In spite of a little firmness due to the movement of cotton prices, therefore, the demand continues weak and yarns show no ability to rise in proportion to the cotton market.***

The situation is illustrated in part by the second chart. Our yarn barometer (which applies to weaving yarns) is about steady or slightly lower, but shows a depressed condition reflecting a small volume of orders for cloth. Meanwhile, spindle activity has not yet been curtailed to anything like the level found necessary in 1924 and yarn production is doubtless still somewhat excessive.

Thus it is difficult to see any prospect for more than temporary strength in the yarn market, and that entirely confined to periods of strength in the raw cotton market. As the production of yarns continues to be curtailed, however, the time will inevitably come when real strength will develop. Probably no one is in a position to say how long; but when (1) spindle activity figures show a little further curtailment and (2) stocks of carded sales yarns begin to decrease and (3) orders for gray goods pick up, it will be time to become bullish on the yarn market.

Faint Signs of Future Turn in Gray Goods

As in the case of yarns, there was a little increase in the price of some descriptions of gray goods last month, forced by the advance in raw cotton. The March average price, however, showed a decline from February and there was no recovery during the greater part of April. As raw cotton climbed above 21c, some buyers, fearing the effect of a possibly short crop, ordered a little more freely and the manufacturers were able to mark up goods in some cases.

But the cold statistics of demand and supply as yet give little encouragement to hope that a sustained advance in goods prices is at hand. Our gray goods barometer (not shown this week) still points downward. No snap appears in the wholesale dry goods markets. New York cotton jobbers' sales have declined and the orders for finished goods are both lower, and too low in comparison with billings. Stocks of cotton goods accumulated in March. As long as the margin between gray goods and raw cotton continues to decline and remain so low there is little ground for optimism.

Perhaps the first faint signs of improvement in the goods markets may be found in the latest figures compiled by the Cotton Textile Merchants' Association. Stocks of standard cotton cloths, as of March 31, showed an increase of 5.3% for the month and far exceeded unfilled orders. For the near future this is a decidedly unfavorable condition. Of course, too, shipments ran behind production. ***It can be said, however, that sales of cotton cloth gained a little on production and shipments, and that unfilled orders showed a slight increase. In other words, there appeared a month ago some signs of a possible turn which, if followed by further gains during the next two or three months, may become the entering wedge of improvement.***

Wool Institute Activities

Increase in Membership and Progress on Program Reported

Since April 16, the following mills have joined the Wool Institute, Inc.: Caledonia Woolen Mills, Goodall Worsted Co., Taft Woolen Co., and Yorkshire Worsted Mills.

These names bring the membership to 137 mills with 40,791 looms, or 62.3% of the total loom equipment of the entire industry.

Last week, H. E. Peabody made a trip through eastern Pennsylvania and the Philadelphia district.

Development of the Institute's regular program is summarized as follows:

1. Costs—H. E. Keating, C. P. A., has been calling on the mills in the Philadelphia district and the larger mills in the vicinity of New York, investigating their cost methods.

2. Statistics—A further increase in the number of mills contributing their monthly figures on production, billing and stocks was recorded during April.

3. Price Policy—In excess of 50% of all the looms in this industry have definitely signified their approval of the general principles involved in the discussions on this subject, which have so far been submitted to only 53% of the total looms in the industry. The importance of having a clear understanding of this phase of the Institute's objective should not be minimized, nor should the groups that have not met as yet formulate a preconceived notion of the purpose of this move.

4. Broadening the Market—This subject is to be brought up for serious consideration and for a definite decision during the afternoon session of the annual meeting on May 23.

5. Group Meetings—The first group meeting of the women's wear woolen and worsted group was held at the Institute offices on April 19; representatives of 34 mills, accounting for 14,429 looms, or 81% of the total number of looms in the entire industry specializing on these fabrics, were present.

The second meeting of the men's wear medium and fine worsted group was held on April 17. The attendance included three mills that were not represented at the first meeting.

Group fabric meetings are scheduled to be held at the Institute offices at 11 o'clock on the dates given—

May 3—First meeting of the men's wear woolen mills.

May 8—Third meeting, men's wear medium and fine worsteds.

May 9—Second meeting, women's wear woolens and worsteds.

May 15—First meeting, lower grade woolens, cotton warp woolens and related fabrics.

May 23—Annual meeting and luncheon at Hotel Roosevelt.

6. Junior Council—The first group meeting of the Junior Council was held on April 24. This meeting was attended by 36 mill and 32 sales representatives. The primary purpose of this meeting was to outline a tentative program which cannot become effective until after the annual meeting.

Marland C. Hobbs of the Arlington Mills has been asked to act as chairman of the Junior Council representatives who will assist in conducting the meeting on May 23.

Invitations to the annual meeting, which will include all divisions of the wool industry, excepting retailers, were sent out this week.

*Volunteer Knitting Mills, Chattanooga, Tenn., which recently purchased the plant of the Wellman Cotton Mill Co., Athens, Ala., has executed a mortgage for $150,000 to the Chickamauga Trust Co., Chattanooga, on the Alabama plant to secure an issue of bonds.

WITH THE EDITORS THIS WEEK

Editors: Charles H. Clark, Vernon E. Carroll, Clarence Hutton, Douglas G. Woolf — *We Believe in the Conservation and Protection of Domestic Industries*

The New Spirit in Evidence

THOSE who have entertained doubts as to the development of a new spirit of energy and cooperation in the cotton manufacturing industry could have had those doubts dissipated at the spring convention of the National Association of Cotton Manufacturers held in Providence last week.

To quote one well-qualified observer, this new spirit "was in the air." Unfortunately, it is impossible to grasp it from printed reports of the meeting. Such psychological manifestations are always intangible—and defy detailed analysis.

At Providence, it was reflected in the absorbed attention accorded speakers at both the technical and advertising sessions; in the enthusiasm with which the remarks of the president of The Cotton-Textile Institute were received; in the predictions for the future which, somewhat paradoxically, accompanied the retrospective session at the Old Slater Mill.

It was reflected still more strongly in the lobby and room conversation—probably the best index of the spirit of a convention.

The devotion of one major session to production problems and one to merchandising considerations represented sound program-planning. It was interesting to note that the same individuals who listened attentively to a discussion of cotton cleaning and opening processes on Wednesday afternoon were equally absorbed in the advertising symposium on Thursday. This points to the fact that recognition of the dual function of a mill man is gaining ground. The only regret is that some of the discussion on both these sections of the program heard in private room parties could not have been transferred to the convention floor.

From every standpoint, the Providence meeting offered justification to those who recognize steady progress at present in the cotton industry. There was no attitude of unthinking buoyancy. There was honest recognition of the many problems confronting manufacturers. But there was a general consciousness that steps are being taken in the right direction—and that continued expenditure of individual and collective initiative will bear an adequate return.

* * *

Should Protest McNary-Haughen Bill

EVERY cotton manufacturer and every textile manufacturer should wire his congressman, seconding the protests of the American Cotton Manufacturers' Association and the National Association of Cotton Manufacturers against the passage of the McNary-Haughen bill, and to President Coolidge urging his veto of the bill if it reaches him.

"That the farmers of the country are any more urgently in need of relief than cotton and wool manufacturers is an open question, but the textile manufacturers of the country can be relied upon heartily to support any economically sound legislation for farm relief. But the equalization fee features of the McNary-Haughen bill is economically unsound, its administration policies and methods are fraught with danger and are little understood, and among non-political economists there is grave doubt as to its permanent merit, even with its equalization fee removed and its administration perfected.

"But the chief reason for cotton-textile protest lies in its provision that, in years of surplus crops, cotton shall be dumped abroad at a price below that paid by domestic manufacturers in order to reduce the domestic supply and raise the domestic price. The price advantage thus presented to foreign competitors would practically destroy our large and increasing export trade in cotton manufactures, and would increase their importation unless there was a compensating advance in tariff duties. These facts afford sufficient cause for urgent and strenuous protest of manufacturers." —Editorial from TEXTILE WORLD of February 12, 1927.

The equalization fee plan of the present McNary-Haughen bill is essentially the same as that of a year ago, the terms of which, as applying to cotton and its domestic manufactures, was the subject of protest by the leading associations of manufacturers, and whose potential danger to the industry was then emphasized in these columns.

The plan is essentially the same, but the danger is greater because both political parties are now more interested in the political effect of the bill than in the "relief" it may give farmers, or in the disaster that it may bring to the country as a whole.

Since politics control the fate of the bill, short of a presidential veto, then possibly it is wise to attempt to secure for the cotton textile industry the same provisions in the bill accorded the millers and packers, as has been demanded by the National Association of Cotton Manufacturers; but the latter is wise, in suggesting such reciprocity, to again register its protest against the bill as a whole. That should be the policy of all manufacturers and their associations who seek relief from this monstrous piece of legislation—and all should register their request and protest promptly.

THE TEXTILE TREND

Cotton Markets: Sharp rise in raw cotton has puzzled market. Buyers not anxious to follow advance. Some prices up; others withdrawn. General level on fabrics still considerably below replacement costs. Cause for higher cotton is threat to supply through unfavorable weather, not broader distribution. Retail sales of seasonables slow. Ginghams for fall soon to be priced. Denims advanced 1c. Print cloths up ¼ to ⅜c.

Wool Markets: Advance in wool goods comes gradually with scattered announcements day by day. Medium and coarser wools are 15 to 20% above year ago; fine wools up only 5 to 8%. American advances suede fabrics for women's wear. Clothiers do more duplicating both because of rise and because of trade with retailers. Advances in three-eighths grade yarns feature the yarn market; demand from all trades quiet.

Knit Goods: Underwear mill agents are dissatisfied with conditions. Restriction of sales by some agents to jobber has not worked out well from sellers' standpoint. Prices may advance because of recent sharp upturn in raw cotton. Buyers want fall dating on underwear. Hosiery makers are considering details of cooperative efforts to improve their market.

Silk Markets: Manufacturers in difficult position with a firm raw market going hand-in-hand with renewal of sharp competition. Demand continues large for georgettes, but prices are close and mills complain that even in this desirable number prices show a recession from two weeks ago.

* * *

Foundation of Thorp's Fame

THE celebration last week of the centenary of the invention of ring spinning by John Thorp of Providence, R. I., definitely established three major facts upon which his fame will rest secure forever:

First, that he is the unchallenged inventor of the system of spinning (the ring and traveler) that is dominant in the world cotton industry, and that is being increasingly utilized for wool and silk spinning.

Second, that his conception of the ring and traveler was wholly novel in the art of hand- or machine-spinning, and has no rival in this respect, other than in the drafting rolls that were developed by John Wyatt, Lewis Paul and Sir Richard Arkwright.

Third, that he was the greatest American inventor of textile machinery during the pioneer period, and takes his place with the other great inventors who made possible the "industrial revolution," including Eli Whitney, Watt, Hargreaves, Arkwright, Crompton and Cartwright.

* * *

A New Function

ONE of the most important thoughts brought out at the N. A. C. M. Convention in Providence was that expressed by S. R. Latshaw.

"The road to the solution of your problems," he stated, "does not lie in the study of statistics nor in concentration on problems of manufacture. Historically the textile manufacturer has considered himself primarily a mill man. He has concentrated on buying, weaving, dyeing, printing and finishing and until 20 years ago, in the majority of cases, he delegated his selling. In many instances he still delegates his selling. . . .

"However reluctant the textile manufacturer may be to assume the problem of selling his goods, I believe that it is necessary."

This defines a new function for textile mill men. Broader than such questions as advertising media, styling of goods, selling to the retailer, etc., is this one fundamental thought of *selling* as a major phase of textile manu-

facture. Mr. Latshaw undoubtedly did not mean that it is necessary for every mill to sell direct; or for every manufacturer to be his own selling agent—any more than he is his own production manager. He implied instead the necessity of merchandising consciousness as well as manufacturing consciousness if success is to be achieved.

* * *

Consideration of Yarn Code

MEMBERS of the Cotton Yarn Merchants' Association at a meeting held this week, thoroughly discussed the subject of the Code of Practices and arrived at the conclusion that a continuance of the agreement would be highly desirable.

It probably would not be difficult to secure admission from members of the association that there had been infractions of the rules laid down to govern the relations between spinners and selling houses. Reports of such infractions have been heard from time to time in the selling markets and they doubtless have had certain basis in fact. But the question for the yarn merchants to decide was whether there was sufficient merit in the arrangement to carry on under its provisions. This question has apparently been answered in the affirmative as far as selling houses are concerned.

It is possible certain amendments to existing provisions may be agreed upon as advisable under existing conditions. In all probability these proposed changes will meet with the approval of sellers who recognize the need for conformity with changing conditions in the industry. It will then be up to the spinners, to signify their approval of the proposals advanced by the selling organizations. The likelihood of such approval will depend in large measure upon the consummation of the proposed cotton yarn merger. Should announcement of the successful culmination of this combine be made at an early date a very different complexion to affairs might exist from that which obtains today. On the other hand if the merger is abandoned the basis on which cotton yarn distribution will be conducted will possibly demand an even stricter adherence to regulatory provisions.

A good deal has been said about the futility of continuing a code of practices with a merger comprising anywhere from 75 to 150 mills in the field. And yet there is no assurance that uniform trade practices could not apply to the distribution of the combined mills' product and be accepted by the officials of such a large unit source as by independents.

Whatever may be the history of the Code of Practices, whether it is to continue to operate as at present, whether it is to be modified or abandoned altogether, it is certainly encouraging to hear the testimony of those who have been operating under its provisions that it has sensibly improved conditions in the manufacture and sale of carded cotton yarns, that it has eliminated much of the speculative element which was formerly the bane of the selling markets and that its abandonment would precipitate sellers into a chaotic condition from which it might take a long time to recover. The principles upon which the code is based are scientific and economic and it should continue to receive the support of market factors whatever may be the developments.

Cotton Yarn Merchants Hold Meeting

A special meeting of the Cotton Yarn Merchants' Association was held May 1, at the Harvard Club, New York, practically every large selling organization being represented. It was the largest gathering of this organization within recent years. Matters of general interest to the trade were discussed throughout the day, especially the Code of Carded Yarn Trade Practices and a plan for the reporting of statistical information. It was the sense of the meeting that the code has brought definite results of a beneficial nature to the industry and to individual members.

A comprehensive statistical plan for the reporting of sales and distribution is to be developed at an early date, by which it is hoped further stabilization of the yarn trade will be accomplished by giving members accurate information on such matters, not obtainable at present. This represents an expansion in activity of the Cotton Yarn Merchants' Association and is regarded as one of the most important steps taken by this trade since the adoption of the present code.

At luncheon the association was honored with the presence of Walker D. Hines, George A. Sloan and Paul Halstead of The Cotton-Textile Institute. Mr. Hines in an address pointed out the advantage of strict adherence to the principles of the code and stressed the importance of solidity of interests in association work.

The following members attended the meeting:

Fred A. Rakestraw, President of the Ass'n., Hyde-Rakestraw Co.; Ralph L. Stevens, Stevens Yarn Co.; E. F. Sherman, John F. Street & Co.; T. Wistar Brown, Schell, Longstreth & Co.; J. S. P. Carpenter, Mauney-Steel Co.; S. M. D. Clapper, Cannon Mills, Inc.; Sidney Cohn, Industrial Yarn Corp.; H. W. Currier, Waterman, Currier & Co.; J. P. Eddy, Tillinghast Stiles Co.; S. H. Garrett, Erwin Yarn Co.; John Hayes, Jasm. E. Mitchell Co.; L. C. Linkroum, Paulson-Linkroum & Co., L. B. Malone, Catlin & Co.; Eugene Muller, L. P. Muller & Co.; Harold Muller, L. P. Muller & Co.; Charles Schell, Schell, Longstreth & Co., J. H. Schoolfield, Reeves Brothers; F. E. Slack, Cotton Yarn Merchants Ass'n.; W. A. Spellissy, Wm. H. Moeller, Inc.; Phil Steel, Mauney-Steel Co.; Henry Street, John F. Street & Co.; John F. Trainor, The John F. Trainor Co.; Pyam Gilkey, Pyam L. Gilkey; Thomas Park, Taylorsville Cotton Mills, and Charles Herx, Tillinghast Stiles Co.

Officials of New Raw Silk Exchange

Paolino Gerli, of E. Gerli & Co., Inc., has been named chairman of the Executive Committee of the National Raw Silk Exchange, Inc. Mr. Gerli's appointment is regarded as adding strength to this new project.

Mr. Gerli also has been made chairman of the Contract Committee, another important unit in the trading group.

Other committee appointments follow: Charles Muller of Sulzer, Rudolph & Co., chairman of Finance Committee and also of Committee on Grading and Inspection; F. R. Henderson, president of the Rubber Exchange of New York, chairman of Commissions Committee; Douglass Walker, chairman of the Location and Site Committee.

Other members of the Board of Governors are: Jerome Lewine, of H. Hentz & Co.; J. C. Cuppia, of E. A. Pierce & Co.; Ralph Hubbard, member of the New York Cotton Exchange; William R. Craig, of W. R. Craig & Co.; August Schierenberg of Corn, Schwarz & Co. It is stated that 183 members have been elected, leaving room for only 67 more.

TEXTILE CALENDAR

National Association of Worsted & Woolen Spinners, Annual Meeting, Waldorf-Astoria, New York, May 9, 1928.

Master Mechanics Division, Southern Textile Association, Regular Meeting, Southern Manufacturers Club, Charlotte, N. C., May 9, 1928.

American Cotton Manufacturers Association, Thirty-second Annual Convention, Richmond, Va., May 17-18, 1928.

National Association of Woolen and Worsted Overseers, Semi-Annual Meeting, Rocky Point, R. I., May 19, 1928.

Textile Division, American Society of Mechanical Engineers, National Meeting, Statler Hotel, Boston, Mass., May 22, 1928.

International Association of Garment Manufacturers, Annual Meeting, Hotel Stevens, Chicago, May 22-24, 1928.

The Wool Institute, Annual Meeting, Hotel Roosevelt, New York City, May 23, 1928.

Spinners Division, Southern Textile Association, Regular Meeting, Lake Lure, N. C., May 23, 1928.

Chattanooga Yarn Men's Association, Annual Golf Tournament and Banquet, Chattanooga (Tenn.) Golf and Country Club, May 24-25, 1928.

Philadelphia Wool & Textile Association, Annual Outing, Mohican Club on the Delaware near Philadelphia, May 26, 1928.

Philadelphia Textile School Alumni Association, Annual Outing at Manufacturers Country Club, Oreland, Pa., and Banquet at Manufacturers Club, Philadelphia, June 8, 1928.

Southern Textile Association, Annual Meeting, Oceanic Hotel, Wrightsville Beach, Wilmington, N. C., June 15-16, 1928.

North Carolina Cotton Manufacturers Association, Annual Meeting, Sedgefield Inn, Greensboro, N. C., June 22-23, 1928.

National Knitted Outerwear Association, Annual Meeting, Hollenden Hotel, Cleveland, Ohio, July 26-27, 1928.

Southern Textile Exposition, Textile Hall, Greenville, S. C., Oct. 15-20, 1928.

Southern Textile Association, Semi-annual Meeting, Greenville, S. C., Oct. 19, 1928.

Associated Knit Underwear Manufacturers of America, Annual Meeting, Hotel Utica, Utica, N. Y., Nov. 14-16, 1928.

Cotton Waste Exchange Election

BOSTON.—The annual meeting of the American Cotton Waste & Linter Exchange was held in the rooms of the association, 222 Summer St., Tuesday, May 1. There was a large attendance of local and out-of-state members. The only business transacted was the election of officers for the ensuing year. Michael F. Dunn was elected president; Russell N. Dana, first vice-president; Joseph I. O'Neil, second vice-president; Samuel H. Roberts, secretary; Walter D. Lane, treasurer. Five directors were appointed as follows for a period of three years: Frank E. Hanington, Jr., William F. Callahan, Lloyd A. Kirkpatrick, John J. Ryan and Frank J. Whalen. For the board of arbitration the following were elected: Walter D. Lane, Grandville Strange and Samuel H. Waldstein.

J. C. Hartogs, Enka President, Sails for Home

Dr. Jacques C. Hartogs, president of N. V. Nederlandsche Kunstzijdefabriek Enka and managing director of British Enka Artificial Silk Co., Ltd., sailed for home Wednesday.

It is understood that progress was made toward organization of the American Enka Corp., but no site was announced as selected for the plant.

Quarters have been engaged for American Enka Corp at 114 East 32d street, New York.

Postpone Texas Meeting

Announcement is made that the next meeting of the Texas Textile Association, tentatively arranged for May 4 and 5, has been indefinitely postponed owing to recent developments which necessitated the change. As soon as definite dates are fixed announcement will be made. Dan H. Poole, superintendent of the Sherman (Tex.) Mfg. Co., is secretary-treasurer of the Association.

Awards for Awnings

Cotton-Textile Institute Gives Prizes for Artistic Use

First prize of $150 has been awarded John Donald Tuttle of 19 East 49th Street, New York City, in the awning competition for architects, decorators and draftsmen conducted by the Architectural League and The Cotton-Textile Institute, Inc.

Mr. Tuttle won the prize for his sketch showing the use of awnings on a house of Spanish architecture. Three other prizes of $50 each were awarded in this class as follows: Walter F. Clark, 171 Powder House Blvd., West Somerville, Mass., Second prize; John I. Kawasaki, 411 Camden Court, Ann Arbor, Mich., Third prize; William Lundeberg, 1102 So. Highland Ave., Los Angeles, Cal., Fourth prize.

In two other classes, the competition limited to awnings for England Colonial and English Cottage types of architecture, first prize was not awarded. Edwin Mitchel Prelewitz, 1844 Washington Street, Auburndale, Mass. won second prize of $50 for his sketch of awnings for a New England Colonial residence. John T. Kawasaki of 411 Camden Court, Ann Arbor, Mich. and J. Raymond Thompson of 940 Buena Park Terrace, Chicago, Ill. received honorable mention.

Walter F. Clark of 1717 Powder House Boulevard, West Somerville, Mass. was awarded second prize of $50 for his sketch of awnings for an English Cottage. J. Raymond Thompson of 940 Buena Park Terrace, Chicago, Ill. received honorable mention.

The jury which announced the results of the competition included Mr. Harry Keith White, Wesley Sherwood Bessell and William Francis Dominick.

"The sketches which were submitted in this competition indicated very clearly that there is a large field for the manufacturers of awnings and awning fabrics to collaborate with architects and builders," stated Ernest C. Morse, in charge of the New Uses Section of The Cotton-Textile Institute, Inc. in announcing the results of the contest.

"From the standpoint of the cotton textile industry it is important that awnings be considered architecturally as a vital part of the plans for any town or country residence. It is true that they are recognized by home owners as a seasonal necessity and not merely a bit of decoration. Their decorative value increases both the comfort and attractiveness of a building, but it ought to be possible to impress builders and owners that awnings are as much a part of the architectural plan as the windows and porches on which they are installed.

"It was interesting to note in this contest that competition for sketches in the Spanish type of architecture evoked more responses than the other two classes combined. Some measure of the interest in the contest is shown by the fact that designs were submitted from New England, New York, the Middle West and also the Pacific Coast."

Northern Men Inspecting Texas Textile Possibilities

Invitations extended by Governor Moody of Texas to a large number of New England and northern cotton manufacturers and bankers to visit that State and inspect its advantages for the location of cotton mills, resulted in a party of five leaving Boston for Houston, Texas, last Saturday, where, on arrival, they will be personally conducted and entertained by the Texas Hospitality Committee. The delegation includes Wilmont R. Evans, Philip M. Tucker and F. Winchester Denio, Boston bankers; John F. Bannon, president of the Mansfield (Mass.) Bleachery, and Gordon Bunker of H. M. Bunker & Co., dry goods commission merchants, New York City.

Changes in Thomas Henry Management

The name of Thomas Henry & Sons, Inc., who removed last year to Nashville, Tenn., has been changed to Thomas Henry Co. In January of this year Henry Ingram, Nashville, purchased the entire interest of J. M. Tallman, and now owns control of the common stock. The authorized common stock has been raised to $740,000, the preferred remaining at $450,000. The mill will continue to make merino and cotton yarn, celanese combinations, Turkish towels and bath mats.

The present officers of the company are Henry Ingram, vice-president and treasurer, and Ernest Jones, secretary. At the present time the company has no president, the vice-president acting in that capacity. Directors are E. B. Ingram, Eau Claire, Wis.; W. H. Hatton, New London, Wis.; Louise C. Ingram, Eau Claire, and Henry Ingram and Ernest Jones, both of Nashville.

Western Cotton Association Annual

The annual convention of the California-Arizona-New Mexico Cotton Association, held April 20 and 21 at the U. S. Grant Hotel, San Diego, Cal., represented all the cotton growing areas of the Pacific Southwest. Business sessions were held Friday morning and afternoon and Saturday morning. Saturday afternoon was given over to sight-seeing. On Saturday evening the San Diego Chamber of Commerce tendered a banquet to the delegates. The officers for the coming year are Charles Provost, Los Angeles, president; R. M. Blankenbecker, Los Angeles, vice-president; J. A. Woolley, secretary-manager. Directors elected were Harold Mauldin, Los Angeles; C. B. Grigsby, Bakersfield; Robert Dickey, Calexico; H. M. Peek, Phoenix, and A. H. Lamberth of Los Angeles.

Phila. Labor College Conference on Textile Conditions

PHILADELPHIA. — Gustave Geiges, president of the American Federation of Full Fashioned Hosiery Workers, was the principal speaker at the conference called by the Philadelphia Labor College at Knitters Hall, April 29, speaking on "Overdevelopment in Textiles." The per capita consumption of hosiery of all kinds in the United States was estimated by Mr. Geiges to be just over eight pairs a year. The consumption of full-fashioned hosiery by women and girls over the age of 15 years in the United States was estimated to be under seven pairs per year. These figures, he said, are based on statistics of annual hosiery production in the United States issued by the United States Census Bureau and take into account exports and imports.

Mr. Geiges stated in his opinion one of the basic troubles with the textile industry was failure to make adjustments in style to meet consumer demands and overcapitalization in many sections of the industry. There seems to be no saturation point in demand for textiles, he continued, but he made it emphatic there must be a complete elimination of obsolete equipment before real prosperity can be expected. He suggested that a governmental commission of inquiry should be instigated for experts, co-operating with employers and employes, to study the textile situation and that a program embodying some minimum wage standards, both in hours and wages, should be worked out.

The conference holding sessions during two days, was called by the Labor College in an attempt to study the textile situation and measures for its stabilization and future progress.

Others who addressed the meetings were Mayor Mackey, Paul Blanchard, author of "Labor in Southern Cotton Mills," David Wilson, of the Amalgamated Lace Operatives, William Smith, American Federation of Full Fashioned Hosiery Workers, Thomas J. McMahon, United Textile Workers of America, Daniel J. O'Donnell, Dyers and Mercerizers Union, No. 702 and Herman Blum of the Craftex Mills, Inc., Philadelphia, representing the Upholstery Manufacturers' Association of Philadelphia, who declared himself in favor of maintaining the highest possible standards of wages and living for workers but objected to alleged inconsistency in practice with the union.

Firestone Fall River Mills Now Employs 1,200

FALL RIVER, MASS.—The Firestone Cotton Mills re-opened on Tuesday following a three days' shutdown for the purpose of stock taking. The recent instalment of additional machinery and completion of arrangements to run over time has made possible the increasing the working force in the plant at this time from 1,000 to 1,200 hands.

Obituary

Alfred G. Thatcher

Alfred G. Thatcher, chairman of the board of Standard-Coosa-Thatcher Co., Philadelphia and Chattanooga, Tenn., prominently identified with the development of the mercerized yarn trade in the United States during the last half century, died suddenly May 1, shortly after addressing an audience in the James B. Providence Friends Meeting House in Media, Pa., death being due to heart disease. He was in his eighty-second

Alfred G. Thatcher

year and would have been 82 years old next October. He was formerly president of the Standard-Coosa-Thatcher Co., having held that office until 1924 when he decided to retire from active participation in the affairs of the firm and at that time was elected chairman of the board. Although Mr. Thatcher did not take an active part in the management of the company during the last four years he maintained his office in the firm headquarters in the Lafayette Bldg., Philadelphia, and was frequently to be seen there. He took a leading part in many other activities aside from business and had just completed an address before a meeting of the Society of Friends when he was stricken.

Mr. Thatcher was one of the most widely known and interesting personalities in the textile industry and he enjoyed a friendship of wide scope throughout the entire textile trade. He was regarded as one of the outstanding factors in the industry and his judgment in cotton and cotton manufacturing was as highly regarded as that of any in the country. He has been one of the outstanding factors in the mercerized yarn trade for many years and his place in this field will not be easily filled.

The firm of which Mr. Thatcher was formerly the head was formed by a merger of three leaders of the cotton industry of the South into one corporation, which took place seven years ago. The oldest member of the group, the Coosa Mfg. Co., was established in Piedmont, Ala., in February, 1892. The equipment of that plant then consisted

(*Continued on page 211*)

THE PERSONAL PAGE

The **Daniel E. Rhyne** administration building of Lenoir-Rhyne College, Hickory, N. C., was formally opened last week. The building was made possible by the large donations of **Daniel E. Rhyne,** proprietor of the Laboratory Cotton Mills, Lincolnton, N. C.

C. R. H. Warnock, president of the Galt (Ont.) Knitting Co., and Mrs. Warnock, have returned from a vacation in Europe. **E. J. Warnock,** vice-president of the same firm, is seriously ill in the Galt General Hospital following an operation.

Walter C. Baylies, senior partner of Amory, Browne & Co., who has been spending several months on a Mediterranean cruise, has returned to his Boston office.

W. J. Eldridge, Hardwick, Magee Co., Philadelphia, was among those appointed members of the Retail Merchants Committee of the Chamber of Commerce, by Philip H. Gadsden, head of that organization.

J. Choice Evins, Spartanburg, S. C., has resigned as president of the J. W. Alexander Development Co., a real estate enterprise, because of the pressure of other business duties. He is president of the Clifton Mfg. Co., and recently became president of the D. E. Converse Mfg. Co.

Frank Taylor, proprietor of the Valle Mills of Thomas Taylor & Sons, Hudson, Mass., has returned from a trip to Mexico.

Nathan Schwab, Nathan Schwab & Sons, Philadelphia, and Mrs. Schwab, sailed April 28 on the Berlin, leaving for Plymouth, Cherbourg, and Bremen. This will be Mr. Schwab's forty-fourth visit to Europe. They will spend several weeks in England and on the continent before returning to this country.

W. H. Fisher, vice-president of T. B. Wood's Sons Co., Chambersburg, Pa., and president of the Power Transmission Association, will sail Saturday, May 12, on the *Conte Biancamano* for Naples. Mr. Fisher, who will be accompanied by Mrs. Fisher, will visit Italy, Hungary, Austria, Germany, France and England, and will return about the middle of August. A farewell luncheon will be tendered Mr. Fisher at the Hotel Commodore, New York, Friday, May 11, following a meeting of the committee at 10.30. All directors of the association are invited to attend the meeting and luncheon.

William T. Rice, vice president of the A. H. Rice Co., Pittsfield, Mass., has been elected president and treasurer to succeed his father, **A. H. Rice,** who died on Dec. 3.

N. B. Mills, has been elected president of Paola Cotton Mills, Inc., Statesville, N. C., to succeed **D. M. Ausley,** deceased. **T. G. Fawcette,** of Mount Airy, N. C., has been named director.

D. G. Melton has been appointed manager of the Milton Spinners, Ltd., in place of W. McMordie, who has left that organization.

George Endicott, vice president and general manager of the Smith & Dove Mfg. Co., Andover, Mass., sailed from New York on Apr. 28 for a 6 weeks' European trip, most of which time he will spend in Belfast, Ireland.

Col. Robert Lee Whipple, Worcester, Mass., a director of the Renfrew Mfg. Co., Adams, Mass., has been nominated trustee for the alumni of the University of Vermont, Burlington.

R. O. Snelling, for the last 18 months secretary-treasurer of the Oregon Linen Mills, Inc., Salem, Ore., has resigned.

W. D. Mahoney, general manager of the Faith Knitting Co., Averill Park, N. Y., has returned from an extended trip to Europe.

Douglas H. Beck, who has been representing the Charlotte (N. C.) Knitting Co.'s "Queen Charlotte" brand of hosiery in Texas for the last 18 months, will have charge of the North Carolina territory from now on, making his headquarters in Charlotte.

Jas. Hines has been elected secretary and treasurer of the Vance Cotton Mills, Salisbury, N. C., to succeed **B. M. Gillon** resigned.

O. F. Asbury, Sr., electrical engineer of Charlotte, N. C., who is widely known among southern mill men is recovering from his recent illness.

K. E. W. Langston, assistant manager of the Ludlow Jute Co., Ltd., Chengail, India, a subsidiary of the Ludlow (Mass.) Mfg. Associates, sailed from Boston on April 29 to resume his duties after a brief visit in this country.

George S. Rich, former purchasing agent for the Hamilton Woolen Co., Southbridge, Mass., has accepted a position with the United Fruit Co. in Havana, Cuba.

T. A. Sizemore, veteran mill man of Greenville, S. C., has recently completed 29 years of service as superintendent of the American Spinning Co., of that city, coming to the plant from the Pacolet Mills in 1899. He began his textile career at Pelham Mill when only 9 years old.

T. D. Shelton is superintendent of the Imperial Cotton Mills, Eatonton, Ga.

George W. Johnson, former superintendent of the Cannon Mfg. Co., Kannapolis, N. C., is now with the Montala Mfg. Co., Montgomery, Ala.

J. R. Dean, for several years superintendent of the bleachery of the Pacific Mills, Lyman, S. C., has resigned. Mr. Dean will be succeeded by **John Ramsbottom,** who for several years has been in charge of the white finishing department of the Pacific Mills, Lawrence, Mass.

William Ryder, formerly superintendent of the Uxbridge (Mass.) Worsted Co., is now superintendent of the Earnsdale Worsted Co., Clinton, Mass.

William F. Lake has accepted the position of superintendent of the Adams (Mass.) Woolen Mills, Inc.

Joe Pell, who for some time has been manager of a silk mill in High Point, N. C., has become superintendent of the Mooresville (N. C.) Cotton Mills, succeeding **John Kennett** resigned.

F. H. Hallenbeck has resigned as purchasing agent for the Durham (N. C.) Hosiery Mills.

Samuel Greer, for 11 years superintendent of the Lancaster Mills, Clinton, Mass., has resigned to take effect on June 1. He has made no future plans except to take a vacation.

D. J. Cooke, formerly with the Standard Silk Co., Phillipsburg, N. J., is now superintendent of the Armion Textile Co., Clinton, Mass.

J. Fred Smith, superintendent of the Union Mills, Inc., Herkimer, N. Y., has received notification from Washington of his appointment as postmaster of that place.

Fred M. Brodie is now superintendent of the dyeing department at the Mohawk Carpet Mills, Inc., Amsterdam, N. Y.

G. B. Wall is now overseer of carding at the Social Circle (Ga.) Cotton Mills Co.

R. H. Rouse has taken the position of overseer of carding at the Dora Mills, Inc., Red Springs, N. C.

Arthur Tidd is overseer of carding at the Rochdale (Mass.) mill of the American Woolen Co.

"DO YOU KNOW?"

Are the advantages of supplying cool drinking water to operatives commensurate with the costs of installing a system?

What proportion of the loomage in the wool industry is now represented by membership in the Wool Institute?

What are the outstanding facts in the life of John Thorp, inventor of ring spinning?

What were the two contrary opinions concerning the Buckley opener expressed at a recent meeting of cotton manufacturers?

What is the hopper system of opening and cleaning cotton?

How can the moisture content of cotton in the various processes be determined with the least amount of trouble?

How extensive a knowledge of the law should a plant engineer possess?

What is the standard regain for cotton in England?

If you are interested in the answers to these questions, you will find them in articles in this issue.

Claude Nettleton succeeds **Alexander Arsenault** recently resigned as overseer of carding f r the Perryville Woolen Mills, Webster, Mass.

Everett E. Kinneconn, overseer of carding for the National Spun Silk Co., Inc., New Bedford, Mass., has resigned.

Michael Spases is now overseer of carding at the Pascoag (R. I.) Woolen Mills, Inc.

D. C. Salonstall is head of the spinning department of the California Cotton Mills Co., Uniontown, Ala.

Vance Seawell has taken the position of overseer of weaving at the Eastern Mfg. Co., Selma, N. C.

W. F. Williams is now overseer of weaving at the Southern Silk Mills, Inc., Greensboro, N. C.

Daniel Paro, overseer of weaving at the Pascoag (R. I.) Woolen Mills, Inc., has resigned.

Thomas Heaton has taken the position as overseer of dyeing and finishing for the company which recently purchased the Adams (Mass.) Woolen Mills.

Louis O. Demers, formerly with the Baltic Mills, Enfield, N. H., is now overseer of dyeing for the Somersville (Conn.) Mfg. Co.

A. H. Little has taken the position as overseer of finishing for the Webster (Mass.) Mills of the American Woolen Co.

Nelson A. Fisher has taken the position as overseer of dyeing for the LaPorte (Ind.) Woolen Mills.

Rowland H. Hartley, who recently accepted the position of overseer of dyeing for the Somersville (Conn.) Mfg. Co. has severed his connections with that company. **James M. Magner,** formerly with the Pondicherry Woolen Co., Bridgton, Me., has succeeded Mr. Hartley.

John F. Campbell is overseer of finishing for the Standish Worsted Co., Plymouth, Mass.

G. H. Tabor, overseer of finishing for the American Mills, of the Hockanum Co., Rockville, Conn., has resigned.

Bert Parkhurst is now overseer of burling and sewing for S. Stroock & Co., Inc., Newburg, N. Y.

Woodie Brantley is now cloth room overseer at the Mobile (Ala.) Cotton Mills.

Luther C. Leagan is night overseer of No. 3 carding at the Mooresville (N. C.) Cotton Mills.

J. F. Childs is now night overseer of carding at the Swift Spinning Mills, Columbus, Ga.

Charles Fraser has resigned his position of foreman of the mill wright department of the Amoskeag Mfg. Co., Manchester, N. H., to enter business for himself.

C. S. Ward has been promoted to second hand in No. 1 carding at the Graniteville (S. C.) Mfg. Co. **S. M. McKeown** has been promoted to second hand in No. 3 carding at the same mill.

N. A. C. M. Convention Proceedings Held Matters of Interest for All Members

Large and Enthusiastic Attendance at Various Sessions in Providence

THE first scheduled session of the spring meeting of the National Association of Cotton Manufacturers last week was the gathering for registration. This and succeeding sessions were held in the Providence-Biltmore Hotel, Providence, R. I., on April 25 and 26. As described in the summarizing article on pages 75 and 76 there were many unusual and attractive features to this convention.

Attendance was large and enthusiastic. The sessions at which technical papers were read, the session on advertising, the smoker, the banquet and not least the Thorp centenary celebration are described in detail on the pages which follow:

Wednesday's Technical Session

Discuss Opening and Cleaning, Moisture, and Roller-Bearing Spindle

THE technical session was opened at 2.30 p. m. Wednesday by Pres. G. Edward Buxton, who welcomed the association both as its president and as a citizen of Providence. He expressed the hope that the members would get the most out of the coming sessions in the way of interest and profit. He believed, he said, that much could be gained by renewals of friendship and the helpful exchange of ideas. "It is only fair to say," he remarked, "that we are not merely engaged in the contemplation of past glories, but that we are alive to these times in a practical and openminded spirit."

A. E. Colby, Vice-President, N. A. C. M.

Mr. Buxton introduced John L. Burton, agent of the Nashawena Mills, New Bedford, as chairman of the meeting. In his opening remarks, Mr. Burton urged the members to enter freely into the discussions, assuring them that only in that way could the session be of most benefit to them. An expression of opinion whether right or wrong, he said, afforded satisfaction to the man who gave it, and led the way to a better understanding of the problems considered.

Col. G. Edward Buxton, President, National Association of Cotton Manufacturers

Cotton Opening and Cleaning

The first paper was by Thomas Hagan, manager of The Textile Development Co., Boston, and was entitled, "Opening and Cleaning of Cotton." Mr. Hagan stated that in his opinion the opening rooms found in the majority of mills are illogical in their arrangement and equipment. The limitations of the bale breaker prevent more than three bales being blended at one time, he explained, and the high and low grades are given identically the same amount of cleaning. He strongly recommended the hopper system as affording the best cleaning, opening, and blending.

A discussion of Mr. Hagan's paper was presented by Robert W. Boys of the Farr-Alpaca Co., Holyoke, Mass. Mr. Boys brought with him samples of cotton that had been treated by the bale breaker and Buckley opener. He also presented samples of waste taken from the Buckley beater, dust trunk, finisher picker, and other machines. About ½ of 1% of waste is removed from strict middling cotton by an eight-section dust trunk, he stated; and 1% of heavy droppings are taken out by the Buckley. He added that the Buckley serves to lighten the work of the pickers, resulting in considerable benefit to the carding operation.

In answer to a question concerning the curling of cotton in the vertical opener, Mr. Hagan remarked that curling is generally due to the stock being allowed to remain too long in the vertical opener. Curly stock is rarely found in cotton under 1⅛ in. in staple, he stated. Chairman Burton remarked that when length of staple is considered, the weave room should be thought of first, as savings gained in preparatory processes can be easily lost in the greater cost of weaving. Long staple is essential to good weaving, he declared. Both Mr. Hagan's paper and Mr. Boys' discussion will be found printed in full among the technical articles of this issue, beginning on page 149.

Moisture in Cotton

Three papers dealing with the subject "Moisture in Cotton and Invisible Waste" were next presented. The first was by Frederick J. Hoxie, consulting textile engineer, West Warwick, R. I. Mr. Hoxie said in part:

"We have no standard of moisture in raw cotton in this country; therefore this important factor varies considerably, many times excess being an item well worth considering when it is calculated that this water is paid for at the price of cotton. It is commonly supposed that reasonable accuracy will require considerable expensive expertism, but this is not the fact as the moisture can be determined with sufficient accuracy for practical purposes by the ordinary picker-room help, by means of a recording hygrometer in a box, as described in a paper which I gave to this association in 1916, entitled, 'The Moisture Conditioning of Cotton with Relation to Picker Fires.'

Philip Dana, Vice-President, N. A. C. M.

"The same procedure can also be

used in tracing the invisible loss through different departments of the mill.

"It is commonly assumed that high atmospheric moisture is almost of

John L. Burton, Board of Directors, N. A. C. M., Who Presided at Wednesday Afternoon Session

universal value in the mill rather than that in many departments too much moisture may be worse than not enough. For example, too much relative humidity in a mule room is absolutely impractical, as the cotton will not hold together before the twist is put in. Moreover too much moisture in the ring spinning and carding will prevent the cohesion of the roving, while a certain amount of absolute humidity is necessary in mule spinning to avoid static and prevent hairy yarn. In order to maintain a high absolute humidity with a low relative humidity which is required in a mule room a high temperature is necessary.

"Previous to the time the paper mentioned was given in 1916, the chief factor in picker fires was over-dry cotton, doubtless due to the quite general custom of putting into the storehouses in the fall cotton enough to last a year or more. Within the last ten years these conditions have changed and much cotton is being bought from hand to mouth as required. The over-moist cotton is becoming more of a factor in picker fires.

Over-Moist Cotton Causes Fires

"Over-moist cotton causes fires by sticking together and packing about bearings in pickers and condensers, while over-dry cotton is ignited by sparks struck by beaters after the manner of the flint and steel and tinder box of old times. Cotton with the normal 8% of moisture cannot be ignited by sparks from an emery wheel unless it is held in front of the wheel long enough to be dried by the blast of warm air from it.

"Over-dry cotton in addition to causing fires is brittle and therefore broken by the beaters, resulting in the loss of good staple. On the other hand, over-moist cotton does not clean well in the pickers. Curves also suggest that the loss resulting from paying for water at the price of the more expensive cotton is increasing."

Mr. Hoxie explained briefly his method for determining in a simple and convenient manner the moisture content of cotton. His apparatus consists of a tight box with a recording hygrometer attached. For testing cotton bales, the opener-room operative puts a handful of cotton from the outside of each bale and another handful from the center into the box. The cotton serves to regulate the humidity of the box, and a glance at the hygrometer curve shows the amount of

F. J. Hoxie, Who Spoke Before Wednesday Afternoon Session, N. A. C. M.

moisture that the cotton contained. Mr. Hoxie stated that experiments in mills have shown him that many disputes over cotton have their real foundation in moisture content.

Uses Hoxie's Method

The second paper on moisture content was presented by J. Frank Morrissey, superintendent of the Interlaken Mills, Harris, R. I. Mr. Morrissey showed how Mr. Hoxie's box-and-hygrometer method of determining moisture content is applicable not only to testing bales but to testing the stock at various processes throughout the mill, particularly before numbering yarn, after slashing, and in the cloth room. This paper will be found among the technical articles of this issue on page 151.

The third paper on moisture content of cotton by William Watson, cotton technologist of the Warwick Mills, Centreville, R. I., will also be found in the technical section on page 153. He described a test showing that the loss of moisture during the usual picking process is practically nothing, and that but little more is lost in the bins.

Roller-Bearing Spindle

The final paper of this session was entitled "Spinning Spindles Equipped with Anti-Friction Bearings," and was presented by R. H. DeMott of the SKF Industries, Inc., New York. He described the construction of the new roller-bearing spindle, giving also a review of its history and a list of its advantages. He employed an enlarged model of the spindle to illustrate his remarks. His paper is included among those printed in this issue on page 155.

An interesting illustrated booklet describing the development of spinning spindles from 1790 to 1928 was distributed to those attending this meeting by representatives of the Fales & Jenks Machine Co., Pawtucket, R. I. About 200 members of the association were present at this session.

A Bigger and Better Smoker

Pulchritude and Torridity, Both Negative and Positive, Feature Orgy

"BIGGER and Better Textile Smokers" is the new slogan of the industry.

Riding on the crest of a wave of profitless prosperity, a "group of Southern New England cotton manufacturers and friends" (to quote the official program) dazzled their guests at Providence with an array of male and female talent unparalleled in the histrionic annals of cotton manufacture.

We can visualize in 2028 a Smoker Centenary, at which a tablet will be unveiled to Chairman Philip C. Wentworth, Wilfred C. Murphy and W. S. Pepperell, of the Smoker Committee,

Wilfred C. Murphy, Member Smoker Committee, N. A. C. M.

for their pioneering efforts in the field of dynamic textile art.

The participants ranged in pulchritude from the indescribably indescribable face of Joe Gallagher to the ethereal beauty of the Seven Sweethearts; and in temperature from the torridity of Marjie O'Neill, who quivered through the ranks of the assembled magnates, to the frigidity of the inert human doll.

* * *

No less a person than Harry Armstrong, whose fame as the composer of "Sweet Adeline" is apparently imperishable, acted as master of ceremonies.

* * *

The poll of the members, now an orthodox part of all well-regulated smokers, showed once more the overwhelming preponderance of Dry Democrats engaged in the manufacture of cotton yarns and fabrics.

* * *

To forestall any libel suit which

Philip C. Wentworth, Chairman, N. A. C. M. Smoker Committee

might grow out of our previous remark about Joe Gallagher's face, we should mention that he referred to it himself in his first song entitled "There's no face like your own."

* * *

To entrench ourself still more strongly, we record the fact that Joe was the hit of an evening marked by keen competition.

* * *

Incidentally, he remarked (not for publication) that he was one of twins

W. S. Pepperell, Board of Directors, N. A. C. M., and Chairman of Smoker Committee

F. W. Howe, Chairman, Finance Committee, N. A. C. M.

—and that his parents drowned the wrong one.

* * *

"Glands may come and glands may go—but monkey business goes on forever" was the title of one of the more sentimental ballads of the evening.

* * *

Referring again to Joe's face. In the higher ranges of his flexible voice, he brought the audience to tears with his plaintive query: "If the rain makes the flowers so beautiful, why the — doesn't it rain on me?"

According to Harry Armstrong himself, "Edna and Jean will introduce for the first time on any stage in America, a brand new dance."

* * *

And they did.

* * *

And it *was* new.

* * *

Here's a tip for the little group of serious drinkers: One of the scientists on the stage recommended the carrying of a crowbar as a testing instrument of precision.

Simply dip the crowbar in the questionable cocktail.

If it becomes rusty—O. K.
If it bends—Oh!!

* * *

During the heat of the evening, we had it in mind to run on our Personal Page the photographs of those who were offered (and accepted) attentions from the good "mixers" among the talent.

W. Irving Bullard, Treasurer, National Association of Cotton Manufacturers; Chairman Membership Committee; Member Board of Directors

Russell T. Fisher, Secretary of N. A. C. M.

On the morning after, we decided not to.

* * *

However, a remark of the toastmaster is in order: "Miss O'Neill picks 'em old and sensible."

* * *

The "Mechanical Dolls" deserve the tribute of this additional mention.

William B. MacColl, Former President, N. A. C. M., and Vice-Chairman of Convention Committee

As do the visiting manufacturers for their restraint in the use of ice.

* * *

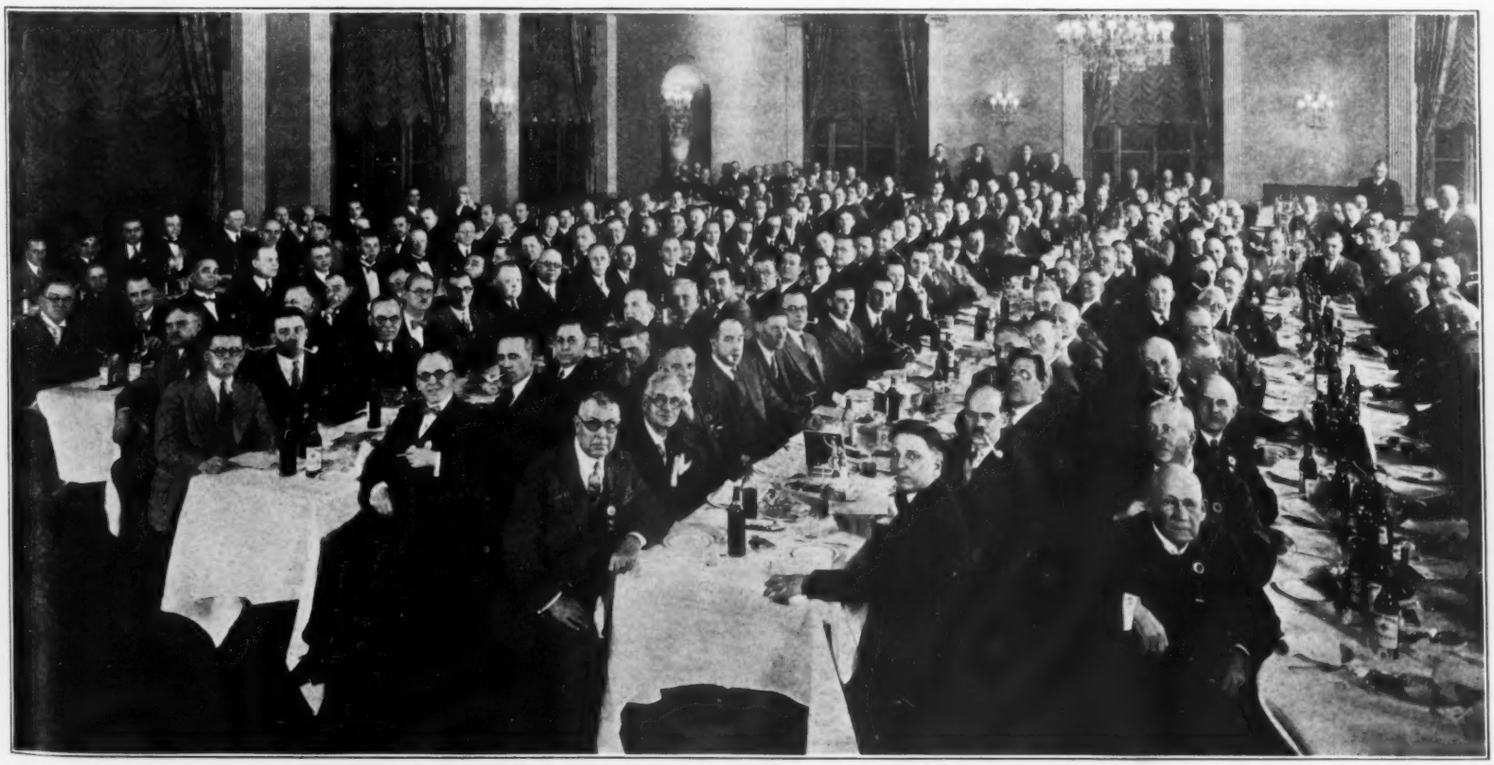
For further information on the Providence Smoker, we refer our readers to the studio of WJZ; Roxie's Theater; Ned Wayburn's Revue; Paramount Theater; Ziegfeld's Follies; Earl Carroll's Vanities and other world-known temples of grace and beauty from which the talent was drawn, at great expenditure of somebody's money, to tell the world that the cotton goods business is rotten.

* * *

The costumes alone accomplished this objective.

* * *

That sort of temperament does nobody's industry any good.



Members of National Association of Cotton Manufacturers at Smoker, Providence-Biltmore Hotel, April 25, 1928

Memorial to John Thorp Dedicated and His Identity Definitely Established

Debt of Industry to This Great American Inventor—Fitting Place for Exercises and Perfect Arrangements Therefor

At the Thorp centenary exercise at the Old Slater Mill, Pawtucket, at 11 o'clock on the morning of April 26, the lineage and other biographical data regarding this great American inventor, the father of ring spinning, was given publicity for the first time, several additional inventions were credited to him, and it was claimed by Charles H. Clark, his biographer, that Thorp's ring and traveler patents of 1828 and 1844 were more novel in the art of spinning than any other inventions of that transition period from hand to machine spinning, with the possible exception of the drafting rolls first perfected by Arkwright. Thorp's greatness as an inventor and the debt owed to him by the textile industry of the world were emphasized by Henry C. Dexter, who was chairman of the session, by Robert Amory who delivered a dedicatory address at the unveiling of the Thorp bronze tablet, and by Herbert G. Beede, who traced the development of ring spinning from the date of Thorp's last patent in 1844.

Perfect weather greeted members and guests when they started from the Hotel Biltmore about 10:30 A. M. for the run to Pawtucket in private automobiles and in seven large motor busses furnished by the transportation committee of which Alexander S. West was chairman. The Old Slater Mill, erected in 1793, and preserved as a museum for the cotton industry by the Old Slater Mill Association, was a logical place for the centenary as it was in operation during Thorp's inventive period and must have been visited by him many times; for that reason, too, it is the logical site for the Thorp memorial tablet. The Old Slater Mill is located almost in the heart of Pawtucket, beside its old dam on the Blackstone River, and viewed from the street across its little park probably looks more attractive today with its fresh coat of yellow paint than it did 135 years ago. It is a two and one-half story structure and the exercises were held on the first floor, where the original preparatory machinery was located; it is a low studded room, about 125 x 40, with the hand-hewn beams of the upper floor exposed, and it is evident that its accoustic properties were not considered by Samuel Slater, although their deficiency was evident to the speakers and their audience during the Thorp exercises; there was also given a very impressive illustration of the inadequate heating facilities of that early period, the heaviest overcoats not being found uncomfortable by those present.

Henry C. Dexter, Who Presided at Thorp Centenary Session of N. A. C. M.

Interesting Exhibits

In addition to the pictures permanently hung on the walls of this room, and including those of Samuel Slater, his associates and other notables of his era, together with pictures of early cotton mills and machinery, there were special exhibits provided for the centenary by Mr. Dexter and Mr. Clark. Particularly important in the former's collection were models of the Thorp rings and travelers of 1844 that had been discovered at the Smithsonian Institution, Washington, D. C., by Frederick L. Lewton, curator of textiles, U. S. National Museum, who made a special trip to the centenary to show them.

Mr. Clark exhibited specifications and drawings of all of Thorp's known patents; a daguerreotype believed to be that of John Thorp; his brother Comfort's bible with record of Thorp's death and age; photostats of Thorp advertisements in the *Manufacturer's & Farmer's Journal* of 1829 and 1830; pictures of the old Fletcher Mill where Thorp's ring spinner was operated, including a sketch prepared by F. P. Sheldon & Son, Providence, showing how it looked in 1829. But perhaps the most interesting Thorp exhibit provided by Mr. Clark was the presence at the centenary of six descendents of John Thorp's brothers, five of them tracing their lineage from Comfort Thorp, and one from David Thorp, and it is regrettable that lack of time prevented their formal introduction to the audience.

Henry C. Dexter Presides

President G. Edward Buxton opened the speaking program by turning over the meeting to Henry C. Dexter as chairman, noting the thorough and able manner in which the latter had prepared for the celebration of the Thorp centenary, and the unusual significance of it to the textile industry of this country and the world.

Mr. Dexter spoke as follows:

"Mr. President, members and guests of the National Association of Cotton Manufacturers, this is historic ground. This is an historic building. As the president said, it might be, and has been termed, the cradle of the cotton manufacturing industry of America. It might be considered an acorn of less than 100 spindles, which has grown to a giant and stout oak which spreads over and includes 37,500,000 of spindles in this country.

"It is said that in all the different mills that were erected at different parts of New England for more than 15 years following 1790, that they were started and built and run by employes who had their apprenticeship right here in this mill. Of course, after other mills had been going 15 or 20 years, they produced employes that went elsewhere, but for the first 15 years they received their training here. This industry also owes much to Alexander Hamilton who established the American system of encouragement to American industry, which has been generally successful

Group of Members of N. A. C. M. and Guests in Front of Old

for a period of more than 135 years. Seldom have they departed from that system, and when they have, it has only been with disastrous results.

"Now this occasion is the centennial of a great change in the manufacture of cotton yarn. The original idea of Arkwright was with the flyer, and it was not until 1828 that the flyer was superseded by another invention. But it wasn't a perfect invention, and so it was not until 1844 or so that the real ring spindle came to be adopted, so that, today, in this world of ours, we have 160,000,000 of spindles, and over 100,000,000 of them are operated by the ring and the traveler.

"In celebrating this event it was necessary, of course, as the inventor had suffered considerably by obscurity, to find out something regarding this man, and so we looked to the editor of a textile paper. You know, in any great crisis, like exigency of war, they say that the occasion produces the man. Well, that is true here. This occasion produced the man. But paradoxically as it may seem, the man produced the occasion. He dug this man up from obscurity. We have called him a sort of foster father to John Thorp, and he will give you a little bit of a sketch as a foundation for this meeting. I am going to introduce Charles H. Clark, editor of the TEXTILE WORLD from Boston."

Speakers at Thorp Session and Bronze Memorial Tablet to John Thorp, Unveiled and Dedicated at Old Slater Mill. Left to Right: Herbert G. Beede, Robert Amory, Col. G. Edward Buxton, Charles H. Clark, Sidney B. Paine

The Inventor of Ring Spinning

John Thorp—His Lineage and Life—An Invention Wholly Novel

"TO adequately visualize the debt that the world owes to the pioneer textile inventors of this country and England it is necessary to bear in mind the difficulties under which they labored," said Mr. Clark. "Hargreaves, Arkwright, Cartwright and Crompton, the great English pioneers, together with Watt, the inventor of the steam engine, antedated Thorp's inventive period by less than a quarter century, but they, together with Eli Whitney, the father of the cotton gin, were the founders of that marvelous transition era from hand to machine manufacture of cotton textiles which is known as the 'industrial revolution.' It extended over the last quarter of the 18th and the first quarter of the 19th century; the genius of these pioneer inventors repaired the errors of statesmen, and in both countries the prosperity created by these new sources of wealth more than made good the losses due to the American revolution, the Napoleonic wars and the war of 1812.

"Do you realize," asked Mr. Clark, "that if we were still dependent upon the hand-wheel and hand-loom of 150 years ago for our textiles our present needs could not be supplied by the country's entire working population? It is estimated that the increased productiveness of machine textile labor as compared with hand labor is as 1,000 to 1.

"Do you realize the handicaps under which the pioneer inventors worked who transformed industry from hand to machine methods? None of the instruments of precision that make machine construction so easy and accurate today; only the crudest kind of machine tools and most of those hand-driven; inadequate light and heat; no facilities for technical education; transport by foot, horse and water only; no railroads of consequence until 1830; almost none of today's common necessities; machinists, carpenters, wheelwrights, dyers and other artisans handing down from father to son their acquired trade secrets and skill, and jealously guarding them from outsiders; Rhode Island and adjacent parts of Massachusetts and Connecticut the center of cotton manufacturing in this country from 1790 to at least 1830, largely as a result of the success of Samuel Slater and his patrons, and consequently the attraction to this center, as by a magnet, of skilled artisans from this and foreign countries.

"In this small territory in 1812 were 53 cotton mills operating 48,030 spindles, and in 1815 due largely to cutting off of imports by the war of 1812 the number of mills in the same territory, or within a radius of 30 miles of Providence had grown to 165 and their spindles to 119,310. In 1840 there were a total of 2,285,237 spindles in the whole country, of which 1,598,198 were in the New England States."

Mr. Clark's paper, which is a complete report of the details of his research and findings of the life and work of John Thorp, including records of information sources, was too long for more than brief mention at the Thorp centenary and can be reproduced only in part here, but it has been published in a 22 page booklet by the National Association of Cotton Manufacturers and will be preserved for future reference in the latter's Official Transactions. Some of the most important features of the paper are as follows:

Ring Frame Displaces Mule

"The continuous method of spinning and twisting devised by John Thorp, and covered by the three basic patents, of Nov. 20, 1828, Dec. 31, 1828, and Sept. 27, 1844, was novel both in the art of machine- and hand-spinning and represented a far more radical innovation than the Jenny, the water-frame and the mule that had preceded it. It is the spinning principle now employed for a little more than 100 million of the 160 million cotton spindles in the world, and increasingly employed for the spinning of other textile raw materials. It was an American invention by a man who was a 100 per cent American. At that time Providence was the cotton spinning center of the United States, and,

Slater Mill, Taken After John Thorp Centenary Exercises

as John Thorp spent the greater part of his life in and near Providence, it is appropriate that the celebration of the centenary of these great inventions and contributions to the spinning industry of the world should be celebrated in Rhode Island.

Meagre Historical Records

"Notwithstanding John Thorp's great contribution to the industry, historical recognition of him is meager and sometimes misleading. This is partially due to the fact that there is no one authoritative history of the development of cotton machinery in this or other countries. The earliest historical reference to John Thorp is contained in 'Cotton Manufacture in the United States,' by Samuel Batchelder, who was born in New Hampshire the same year as John Thorp, who was himself an inventor and one of the country's leading cotton manufacturers during the first half of the 19th century. On page 86 of this work, which was published in Cambridge, Mass., October 1863, appears the following paragraph:

"A spinning frame called the ring spinner was invented by John Sharp of Providence about 1831, and, with some later improvements, has come into extensive use in this country, and is supposed by many to produce yarn cheaper than any other machine, but its use in England to any great extent has probably been prevented by the great improvements in the self-acting mule."

Mr. Clark presented evidence that it was John Thorp who was referred to by Batchelder and not John "Sharp"; he also corrected a number of other erroneous historical references to the origin of the ring and traveler, and quoted from another contemporary of Thorp who gave him credit for this invention, this being William Mason, founder of the Mason Machine Works, Taunton, Mass., and one of the first builders of a ring frame.

Thorp's Discoverer

"To Robert E. Naumburg, now of Winchester, Mass., and for many years patent expert with Saco-Lowell Shops," said Mr. Clark, "must be given credit for unearthing from the records of the United States Patent Office the several ring spinning and other patents granted to John Thorp, and according him proper rank with other textile pioneers, in a paper presented to the Southern New England Textile Club, March 31, 1925. He introduced his paper on John Thorp as follows: I am going to speak to you about a man who spent most of his life in Providence, and, as far as we know, all of his life in southern New England; a man who lived a century ago and was one of the greatest contributors to the development of textile machinery; a man who deserves to rank with Arkwright, Hargreaves, and Eli Whitney—the great textile pioneers; a man whose name should be a household word, and yet in his native city, I venture to say that 99 per cent of the population have never heard his name. I am going to speak to you about John Thorp of Providence, textile pioneer.

"Mr. Naumburg, described nine of John Thorp's patents, specifications and drawings of which are official records of the United States Patent Office, and are indisputable evidence of the basic nature of his ring spinning patents and their priority in the art. The outstanding achievement of John Thorp, writes Mr. Naumburg, the one for which he deserves to be remembered, is his invention of ring spinning. Whatever claims other inventors may have to the power loom and to cap spinning, John Thorp is undoubtedly entitled to credit for the invention of spinning by means of a ring.

"In addition to the patents enumerated by Mr. Naumburg is one granted to him Nov. 20, 1828, for a netting machine and record of a patent granted jointly to John Thorp and Silas Shepard of Taunton, Mass., for a power loom, October 14, 1816, raises the question of whether there may not be other patents on record to which Thorp was a party, but which are at present unknown because indexed under the name of the joint inventor.

Thorp's Known Patents

"The complete list of the known patents of John Thorp is as follows:

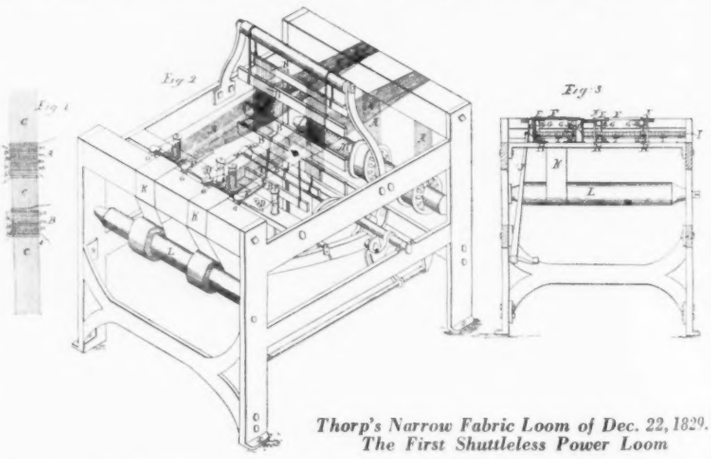
1812, Mar. 28.—Hand and Water Loom. (Recorded anew, Jan. 28, 1843.)
1816, Oct. 14.—Power Loom (Jointly with Silas Shepard.)
1828, Nov. 20.—Rotary Ring and Revolving Hook
1828, Nov. 20.—Netting Machine
1828, No. 25.—Cap Spinning
1828, Dec. 31.—Ring Groove Spinner and Separator (Recorded anew, Jan. 28, 1843.)
1829, Mar. 20.—Single Cam Builder Motion
1829, Apr. 3.—Separator for Cap Spinner
1829, June 13.—Running Cap Spinner
1829, Dec. 22.—Narrow Fabric Loom
1844, Sept. 27.—Improvements on Rotary Ring and Revolving Hook Spinner of Nov. 20, 1828

"It is John Thorp's invention of the art of ring spinning that we are celebrating this year, but had he not displayed sufficient genius and inventive ability in that connection, his other textile inventions would mark him as an inventive genius of outstanding ability for his time, and would warrant more careful study than has yet been made of them in comparison with then existing hand and machine methods to determine with accuracy what was novel in his patents. It is worthy of passing note that his power loom of 1812 operated the lathe with a crank four years in advance of William Gilmour's patent, and had a particularly ingenious shedding motion, an automatic take-up, a novel picking motion, and a protective device that operated when the shuttle stopped in the shed.

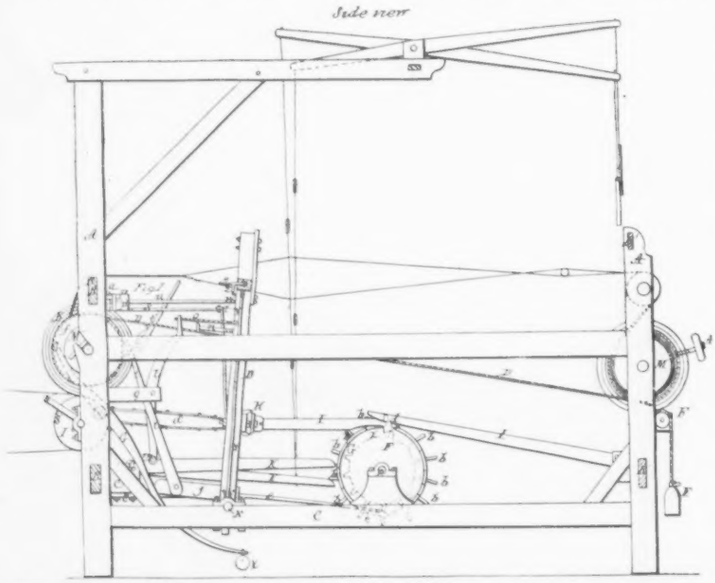
"His narrow fabric loom, patented December 23, 1829, was apparently the first gang loom operated by power, and was apparently the original shuttleless loom and utilized the arms carrying the filling across the shed to beat up the picks, thus having no lathe. The filling supply was fed from spools, and was carried into and across the shed by vibrating arms fixed on each side of the latter and hinged on the breast beam. A disadvantage of this loom was that it made a double pick, but it had so many other ingenious advantages that it seems strange that it was never renewed as was the case with his loom of 1812 and his ring spinning patent of Nov. 20, 1828.

"Another extremely ingenious Thorp patent was his netting machine of Nov. 20, 1828, the principle of

Descendants of Brothers of John Thorp. Front Row, Left to Right: Mrs. George Capen; Mrs. Harriet Capen, grand-daughter of Comfort Thorp; Mrs. Lena Thorp Adams, daughter of Mrs. Capen; Mrs. Marie Griggs, sister of Herbert Young. Standing, Left to Right: George Capen, son of Mrs. Harriet Capen; Allston Thorpe, great-grand-son of David, brother of John Thorp; Herbert Young, great-grand-son of Comfort Thorp



Thorp's Narrow Fabric Loom of Dec. 22, 1829. The First Shuttleless Power Loom



Elevation of John Thorp's "Hand and Water Loom" of 1812, His First Patent

which is still in use; his cam builder motion was a necessary adjunct of the ring frame and was ingeniously conceived; and he was the original inventor of separators for both ring and cap spinning frames.

"While Thorp's cap spinning patent, applied for Nov. 10, and issued Nov. 25, 1828, was antedated by that of Charles Danforth, which was applied for June 11 and issued September 2, 1828, it was Thorp's, and not Danforth's, construction that was universally adopted on cap spinning frames and is in use today.

A New Method of Spinning

"I have asserted that Thorp's ring spinning inventions of 1828 were wholly novel in the art of both hand and machine spinning with respect to their control of wind and twist by the use of the ring and traveler, or hook. I go further and claim that, to that extent and with one exception, they are the only spinning inventions of that era of transition from hand to machine cotton manufacture that were not adaptations of prior hand methods, or derived directly therefrom. The exception was the drafting rolls originally discovered by John Wyatt in 1737 and patented in 1738 by Lewis Paul, and in 1769 perfected and introduced by Sir Richard Arkwright, whose water-frame was patented in 1769 and the patents annuled in 1785.

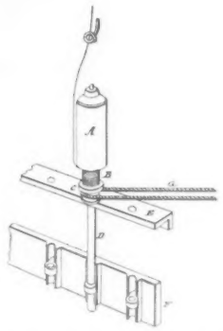
"Assuming your familiarity with the principles of the three other outstanding cotton inventions of that transition period, it will be noted that Hargreaves' jenny of 1764 was little more than a group of power driven cotton or wool spinning wheels, the sliding clasp, that held the rovings and drafted them while twist was inserted, being merely a clever adaptation of the identical operations as performed by the hand spinners' fingers and the single spindle, the winding operations of the jenny and hand methods being identical. Hargreaves is said to have conceived the original idea of this machine from seeing a one-thread wheel overturned on the floor, when both the wheel and the spindle continued to revolve. In his use of the clasp for drafting it was merely an improvement on the so-called roving billy.

"Arkwright's water-frame adapted the flyer principle of the old hand flax machine for its twisting and winding, which principle was continued for some years in cotton spinning in the throstle frame, but in present day cotton mills is utilized only in roving frames and occasionally in twisters. Arkwright's greatest contribution to the industry was his perfection of the Wyatt and Paul system of roller drafting.

"Samuel Crompton's fame rests upon his successful and ingenious combination (1779) of Arkwright's drafting rolls and the twisting and winding principles of Hargreaves' jenny—therefore the hybrid was dubbed a mule, and a mule it remains today, although Roberts with his self-actor mechanism (1825) made it a

Old Stone Mill of Thos. & Wm. Fletcher (Now International Braid Co.), Providence, Where Thorp's Patent Spinner Probably Was Operated in 1829

docile and automatically controlled animal. It detracts not one iota from Crompton's fame to point out that his ingenious mechanisms, other than his use of Arkwright's drafting rolls, were merely improvements on the twisting and winding methods originated by



Thorp's Cap Spinner of Nov. 25, 1828

Hargreaves. Further, Roberts' fame rests secure although he was merely the first of hundreds of ingenious inventors who have helped to carry to perfection the basic inventions of the pioneers who performed the greater task of releasing unborn millions from the bondage of the hand wheel.

Possible Source of Principle

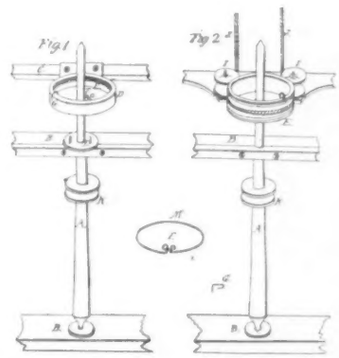
"We search the varied mechanisms of hand spinning in vain for anything anticipating, or remotely resembling, the rotating, or stationary, ring and the hook and traveler of John Thorp. In vain have I searched textile records for some intimation of the manner in which Thorp's ingenious mind happened upon the ring and hook idea. I seem to find the line of his deductive reasoning in the closely contemporaneous invention by him and by Charles Danforth of the cap spinner. The form of the cap is developed when a flyer or throstle revolves. I find in a biographical sketch of Danforth that his first cap was formed by permanently securing a throstle spindle in the frame to prevent it from turning, then, after cutting the curls from the ends of the flyer, he riveted to them a smooth ring; he then turned a groove in the lower head of the bobbin for the driving band to run in, and having put all together, he started the frame and filled the bobbin without any difficulty. I can seem to hear Thorp saying to himself, 'Why not do away with the arms and have a revolving ring with a hook attached to it, the latter free to move separately but with the ring, and thus providing the necessary drag for the yarn and controlling the wind?' Probably it was by a longer process of try-and-reject methods by which he arrived at his objective, but the fact that his patent for the ring grooved spinner and revolving hook was taken out just before that of his cap spinner seems to indicate conclusively that the former idea came to his mind almost as soon as did the latter, and that for ingenuity and inventive ability he is the superior of Charles Danforth. What a pity it was that he lacked the business ability of the latter, or failed to associate himself with someone having the necessary business ability to capitalize his inventive genius!

Thorp Unhonored

"It was the celebration in Bolton, Eng., in June of last year, of the centenary of the death of Samuel Crompton, inventor of mule spinning, that first impressed me with the lack of recognition of John Thorp and of the enormous benefits that have accrued to the textile industry of the world as the result of his inventive genius. For nearly a century Crompton's great invention had held a dominant position for cotton spinning, but during the last 50 years it was slowly but steadily superseded by the ring frame, particularly in this country, and for the last quarter century, at least, the spinning system invented by Thorp has taken precedence of the mule for cotton manufacture throughout the world, and for a much longer period in this country. Yet Crompton, for an invention that is now of lesser importance to the industry, was adequately honored in history whereas Thorp remained unknown excepting for United States Patent Office records as brought to public attention by Naumburg in 1925. Crompton's birthplace, the Hall i' th' Wood, where he invented the mule, and the factory building, where he operated it successfully, are all preserved. Although he died in comparative poverty he was presented with several gratuities by the British Government during his life time. A statue of Samuel Crompton was dedicated in his native Bolton in 1862, and the leading associations of cotton manufacturers of Great Britain and Europe gathered in Bolton last June to celebrate the centenary of his death. His life and work, as well as his inventions, are adequately recorded in history, while John Thorp a year ago was unknown and unhonored excepting for Mr. Naumburg's record of his inventions.

Celebration Organized

"This was the situation that I brought to the attention of the domestic cotton industry last summer editorially and followed up by correspondence with leading manufacturers both North and South. The individual responses were almost uniformly hearty endorsements of the idea of celebrating the centenary of the invention of ring spinning by John Thorp in 1828. The associations are naturally slower to move in such matters, but Philip C. Wentworth, treasurer of the National Ring Traveler Co., Providence, and secretary of the Southern New England Textile Club, who had seconded Naumburg's idea of honoring John Thorp in a paper read before the Southern Textile Association the previous spring, brought the matter formally to the attention of the Southern New England Textile Club



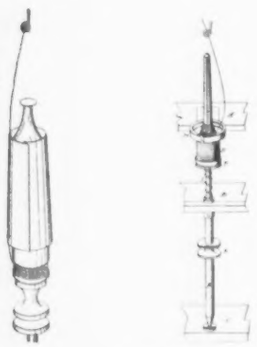
Thorp's "Rotary Ring and Revolving Hook Spinner" of Nov. 20, 1828

and President John F. Reardon of that organization appointed a special committee headed by Mr. Wentworth to investigate the subject. This committee, consisting in addition to Mr. Wentworth, of Henry C. Dexter,

Ezra Dixon and John T. Balmer, reported unanimously in favor of celebrating the Thorp centenary, but suggested that it be held under the auspices of the National Association of Cotton Manufacturers. As the result of a resolution presented to the latter organization by E. Kent Swift, treasurer of the Whitin Machine Works, Whitinsville, Mass., it was voted to make the centenary a feature of their spring meeting, hloding the latter in Providence, giving over to a committee made up of members of the Southern New England Textile Club, and headed by Henry C. Dexter as chairman, responsibility for the Thorp celebration at the Old Slater Mill, Pawtucket.

Difficult Historical Research

"Having created sufficient interest in the idea of celebrating the Thorp centenary I was soon made conscious of the fact that I would be held personally responsible for producing something regarding John Thorp other than patent office records of his inventions, and I therefore started last September to locate a history of Thorp's family and genealogical and vital records that would give us an adequate picture of the life and work of this great inventor. It took only one visit to the rooms of the New England Historical Genealogical Society in Boston to learn that there was no genealogy of a Thorp family and that the Arnold vital records for Rhode Island contained no John Thorp who would link up with the inventive period from 1812 to 1844 of John, the father of ring spinning. I then consulted Librarian Chapin of the Rhode Island Historical Society and at his suggestion I secured the services of a young lady experienced in historical research work, Miss Eileen Mac-



Thorp's Separators: Left for Cap; Right for Ring Spinning

Manus, and with absolutely no link in the chain to guide us, excepting names of witnesses of Thorp patents, we commenced search of the files of the *Manufacturer's & Farmer's Journal*, predecessor of the *Providence Journal*, starting in 1812, the date of the first Thorp patent.

A Thorp Advertisement

"This search disclosed a large amount of interesting information regarding the development of the textile industry in Rhode Island and the country as a whole, but the most important Thorp finding was the following advertisement dated Providence, March 9, 1829, that appeared once a week for three months:

THORP'S PATENT SPINNER.

THE Public is respectfully informed that Thorp's Patent Can, Cap and ring Spinner, and Thorp's improvement in the formation of the spire of Yarn, or Weaver's bobbins, are the property of the subscribers, and,all persons are cautioned against purchasing or using either of said improvements without their consent.

These improvements are now in successful operation in this place, near the Mill Bridge, where they can be examined, and the subscribers deem it sufficient to say, those persons who have examined them, are satisfied that they are great and permanent improvements, well worthy the attention of Manufacturers.

Orders (post paid) for these improvements, or either of them, or for the right to use them in any section of the country, will be punctually attended to if addressed to either of the subscribers.

JOHN THORP,
JEREMIAH WHIPPLE,
THOS. & WM. FLETCHER.
Providence, March 9, 1829 oaw3m

Advertisement Appearing in Manufacturers' and Farmers' Journal, Providence, March 9, 1829

"This advertisement gave us the first definite lead for research, linking John Thorp as it did with Thomas and William Fletcher, whose father was one of the first manufacturers in this country of shoe strings and candle wickings, and who started manufacturing in a small way in 1793 near Mill Bridge, North Providence. Personal interviewing of descendents of Thomas and William Fletcher including Mr. John O. Ames, president of the International Braid Co., successors to the business of the Fletchers, disclosed nothing more definite regarding John Thorp than that certain of them had heard Thorps mentioned as being valued employes of the Fletchers, and also disappointing us with the information that no business records of Thomas and William Fletcher had been preserved. Search of deeds, tax records, etc., did disclose the fact that the old stone mill of the International Braid Co., now standing and in daily operation on Ormsbee Ave., was built before 1828, and presumably was the mill where Thorp's devices, mentioned in the advertisement of March 9, 1829, were operated.

Relatives Located by Advertising

"This was approximately the status of the research when, about three months ago, the National Association of Cotton Manufacturers at my suggestion, inserted in Providence and Pawtucket papers an advertisement asking descendents or relatives of John Thorp, or anyone who could furnish information regarding him, to address the association in Boston. Naturally it is gratifying to one who has been associated in the publishing business for many years, both in the advertising and editorial departments, to be able to give advertising credit for being the first direct medium of definite information regarding John Thorp's life. The advertisement, of course, brought a number of replies the following up of which took much time and was futile, but they also placed us in touch with three direct descendants of Comfort Bucklin Thorp, a brother of John Thorp, and also with one direct descendent of David Thorp, who also was a brother of John Thorp. The entries in the bibles of Comfort and David Thorp were the real start of the research that has disclosed the fact that John Thorp was a 100-per-cent-American.

The Thorp Genealogy

"John Thorp, the inventor, was born in 1784, presumably in Rehoboth, Mass., the son of Reuben and Hannah (Bucklin) Thorp. No records of the date and place of his birth have been located, but entries in the bibles of his brothers, David and Comfort, agree that at the time of his death, Nov. 15, 1848, he was 64 years old; for the assumption that he was born in Rehoboth there is circumstantial evidence in the fact that his father and mother published their marriage intentions there although they were married in Providence, Feb. 20, 1765, and in the additional records of the birth in Rehoboth in 1769 of his elder brother, David, and the birth in Pawtucket in March, 1792, of his younger brother, Comfort B.

"His father, Reuben, was born in Dedham, Mass., Sept. 1744, the second son of John and Hannah Thorp. Reuben was a coach-builder and his father was a wheelwright. The only facts regarding the latter's short life that have been discovered are contained in the records of the Dedham South Parish Church. They show that he married 'Hanah,' Oct. 18, 1739; that they had four children; John, born July 19, 1740; Mary, born Dec. 13, 1744; Reuben, born Sept. 1743; and Joseph, born Apr. 23, 1745. The fact that John and Hanah 'owned ye covenant,' Aug. 1740, bespeaks their piety. On a military expedition to Cape Breton Island which resulted in the capture from the French of Louisbourg, June 17, 1745, John contracted some disease that

Thorp's Ring and Traveler of 1844

resulted in his death Oct. 14, 1745, aged about 30 years.

"While it has been necessary in establishing the antecedents of John Thorp, the inventor, to construct for the first time a fairly complete genealogy of the descendents of John and Hannah of Dedham, only brief additional data of this character is needed to define the former's immediate family connections. His father's death in 1824, was in Providence, and his mother's Sept. 1, 1796, in Pawtucket. An elder brother, David, was born in Rehoboth, Oct. 1769, and died July 26, 1822. He was a millwright. A son of the latter, Capt. David, was born in Providence, Sept. 26, 1798, and was a mariner. Another son, Reuben, born in Providence, June 15, 1803, was a carpenter and wheelwright and is the only Thorp whose name appears as a witness on any of John's patent papers. A younger brother of John, Comfort Bucklin, was born in Pawtucket, March, 1792. He married Lydia Aldrich, June, 1811, and died Feb. 11, 1868, his wife surviving him by two years. Descendents of Comfort and David of the third generation, and a descendent of an adopted daughter of Reuben, son of David, have been valuable sources of information regarding Thorp genealogy.

From Machinist to Machine Builder

"There is well authenticated evidence that John, Comfort, and Reuben, John's nephew, were associated with Thomas and William Fletcher, at their plant near Mill Bridge, North Providence, in various capacities for a long period of years, and that their services were an important factor in the success of the Fletcher business. John apparently always maintained a separate business as machinist until 1832 at least, living at the rear of 168 High St., and later as a machine maker, the 1836 Providence directory thus listing him with a shop on Federal Hill. There can be little doubt that after he had established his reputation as an inventor by his loom patents of 1812 and 1816 his work as a machinist was subordinated to his inventive passion, and that, like most inventive geniuses, he worked at his trade only sufficiently to provide the wherewithal for living and inventing. His collaboration with Silas Shepard in 1816 on their loom patent was probably as an expert, and this and other similar retainers must have been highly remunerative, for skilled machinists were among the most highly paid artisans of those days, earning $1.50 to $1.75 a day, as compared to 50 to 75c for common laborers, and an average of about $1.50 to $2.00 a week for women operatives in cotton mills. That he was prosperous at that time and was hopeful of the future seems confirmed by the fact that on Aug. 18, 1817, he was married in Providence by the Rev. James Wilson to Eliza A. Williams.

Association with Fletchers

"Presumably it was about this date that John's brother, Comfort, became associated with the Fletchers, to continue with them many years, latterly in a managerial position. We have no record of John's contact with the firm until 1829, when a joint advertisement of him, Thomas and William Fletcher and Jeremiah Whipple appeared in the Manufacturer's & Farmer's Journal. It is fair to presume, however, that the Fletchers were interested in John's inventions both financially and because of their adoption in their plant, and Whipple, who was a wealthy man, presumably was interested in them financially. Such ventures by shrewd men like the Fletchers and Whipples

are not entered into casually, and it is a safe assumption that John had been associated with them for several years, and possibly financed by them, while the ideas were maturing that resulted in his numerous patents of 1828-29. Reuben, whose name appears as a witness of one of John's patents of 1829, appears to have been a favorite of his uncle, and this is not strange for he must by that time have given evidence of the inventive ability and mechanical skill that later resulted in his taking out patents for the first braiding machine and first loom-harness machine. These are credited in Daggett's History of Attleborough to a Thorp, and although not confirmed by a search of patent records we feel safe in crediting them to Reuben.

It is recalled by descendants of the Fletchers and Thorps that he was a valued employe of the Fletchers, and that he received a pension or royalties from them long after he retired. He is mentioned thus prominently here because of his evident close association with his uncle, John, and because of the probability that his uncle's training and advice were largely instrumental in stimulating his mechanical skill and inventive faculty.

Was Unsuccessful Financially

"The extent to which John developed commercially his ring and hook or other inventions and profited financially therefrom may always remain a mystery, as it is today, but we do know that March 7, 1828, Willard and Ruth Eddy, in consideration of $800, deeded to him 5400 sq. ft. of land and the building thereon, situated on Hopkins St., Providence, and that the Providence tax records of 1829 to 1833 inclusive assessed him on real estate from $800 the first year to $1,600 for the last four years.

"Few of the pioneer textile inventors of this country or England were as successful in capitalizing their inventions as they were in making possible the transition from hand to power methods of manufacturing. Crompton, despite a temporary success and gratuities from the government and benefited manufacturers, died disheartened and in poverty. Arkwright was one of the few successful British textile inventors of those times, and is credited by historians as having had the business ability to make a success in any venture. Charles Danforth, inventor of cap spinning, was one of the few successful American inventors of the same period, but he, like Arkwright, was more skilled in manufacturing and business than in invention. John Thorp has left no evidence of having been distinguished by any quality excepting great mechanical and inventive skill and vision. He like Crompton died poor and possibly disheartened.

Handicapped Financially

"Even if John Thorp had been endowed with greater business ability it is not at all certain that he would have been more successful in capitalizing his inventions, for there were at least five financial panics of varying magnitude, during his inventive period from 1812 to 1848, each of which took heavy toll of cotton and other manufacturers in and near Providence. Those of 1815-16, 1829 and 1837 were particularly disastrous, and in 1829 even Samuel Slater, despite the fact that his invested fortune was then estimated at close to a million dollars, was forced to liquidate some of his properties to tide him over the period of tight money. There is strong circumstantial evidence that financial difficulties frequently dashed the hopes of John Thorp, and may have been a contributing cause of his death.

"It will be recalled that in 1844, when he applied for his last patent, he gave his address as North Wrentham, Mass. In Shepardville, Wrentham, was located one of the oldest and most successful cotton mills in the country, founded by Benjamin Shepard and operated in 1844 by Shepard & Ide, the senior partner being Benjamin Nelson Shepard, a grandson of the founder and a nephew of Silas Shepard, with whom Thorp in 1816 collaborated in inventing a power loom. That Thorp had known B. N. Shepard for many years and was in Wrentham to secure his financial assistance seems quite plausible; and if he had been partially successful in this quest then the failure of Shepard & Ide early in 1848 must have been a serious shock to him, and may have hastened his death in Providence, Nov. 15, 1848.

"Providence vital records, on file at the City Hall, contain in Vol. VIII, p. 251, the entry of John Thorp's death. The date and his age are incorrect, but that he was a resident of No. Main St., was a widower and died of pneumonia may be accepted as correct. At this writing his place of burial is unknown, but most of his relatives of that period were buried in Old North Burying Ground and it is quite possible that he lies there, and that the incomplete records of that cemetery prior to 1850 are responsible for the non-identification of his grave.

Why Thorp Was So Long Unknown

"John Thorp died without issue and outlived his wife. All of his immediate relatives, excepting his nephew, Reuben, who died Apr. 28, 1878, had passed to their reward many years before the ring spinning frame had begun in the 1870s to assume a commanding position in this country with the greater perfection of the spindle. Reuben may have appreciated his Uncle John's great contribution to the industry, but if he left papers confirmatory of this fact they are yet to be discovered, as are papers that his uncle may have left. It is not surprising that other descendents of John's brothers should have been unaware of the latent fame of the great inventor, nor that contemporaries, other than William Mason and Samuel Batchelder, should have failed to envision the importance of his contribution to the industry, for during Thorp's lifetime it was not apparent.

"William R. Staples, author of 'Annals of the City of Providence,' was evidently one of Thorp's patent lawyers, for his name appears on two of the latter's patents, but lack of any reference to Thorp in the 'Annals' is hardly more surprising than lack of any reference to Thorp in Samuel Slater's biography. Even though they must have known and respected his ability as an expert machinist and inventor, neither could have had any conception of the future of the ring frame. It was 35 years after Crompton's death before his native Bolton honored him with a statue, and it was not until the centenary of his death that Great Britain and the world gave him adequate honor. It is only when the development of the ring frame is viewed through a perspective a century long that its importance to the industry and John Thorp's contribution to the industry can be adequately visualized."

Electricity in the Textile Industry

Its Beginnings Recorded by S. B. Paine —Mills That Were First Electrified

IN introducing Sidney B. Paine, who spoke on "Electricity in the Textile Industry," Chairman Dexter stated that it was a timely subject to follow a story of the beginning of the textile industry in this country, but that in this case it was possible to hear the exact facts from one who played a most important part in the introduction of electricity into the industry. Sidney B. Paine was an associate for many years with Edison and other electrical pioneers, and for his work in this connection was awarded the medal of the National Association of Cotton Manufacturers. "It is gratifying that we can now hear and place on record the experiences of Mr. Paine," said Mr. Dexter.

"Necessity," said Mr. Paine, "is and always has been the mother of invention. The student of the history of our national industrial life cannot fail to be impressed by the fact that each advance has been preceded by a period, in which desire for accomplishment has become increasingly urgent, until finally a solution was found—imperfect it may have been at first, but which has at least pointed out the way by which the desire may be satisfied.

"We have paid our respects to the memory of John Thorp, the inventor of the spinning ring—an outstanding example of the law of progress to which I have referred. This invention was revolutionary in its character, and is largely responsible for a great advance in the art of cotton manufacturing.

"I have been asked to tell you the story of the electrification of the textile mills, a development which started nearly fifty years ago. I became connected with the electrical industry in March, 1881, when 'electricity is in its infancy' was a household proverb. I was not present at its birth, but I am deeply grateful that I was permitted to help rock the cradle. I entered the employ of the Edison Company, in October, 1881.

Sidney B. Paine, Who Spoke at Thorp Centenary Session of N. A. C. M.

"At that time, the telegraph and the mail were practically our only means of communication, as the telephone was first shown at the Centennial Exposition five years earlier, and its use in 1881 was limited to local communication. Motors were merely dynamos reversed, in that they received the current while the dynamo generated the current. In 1881 I had never seen a motor, as they were merely laboratory toys. The largest arc machine could supply current to only ten lamps. Incandescent lamps were in the experimental stage, the fundamental patent having been issued to Edison on January 27, 1880. Their practicability was ridiculed by my first employer in the electrical industry. Horse-drawn vehicles, the steamboat and the railroads were our only means of travel. Candles, oil, and gas were our only means of illumination in our homes.

Earliest Electric Lighting

"In the time allotted to me to review so much of progress since then as relates to the textile industry, I must confine myself to a brief reference to the initial electrical installations which have been responsible, in a large part at least, for this subsequent development.

"Arc lamps were first used in a textile mill in this country by the Riverside Worsted Mills of Olneyville,

R. I., in February 1879, the order being placed with the Brush Electric Co. of Cleveland, Ohio.

"The Orange County Woolen Mills of Newburgh, N. Y., was the first textile mill to use incandescent lamps, when, early in 1881, a 60-light Edison dynamo was installed. A little later in the same year an Edison dynamo was placed in the Wamsutta Mills to determine whether an 8 or 16-candle power lamp was best suited for mill illumination. As a result of this test, an order was placed for three 250-light (16-candle power) dynamos for the new No. 6 Mill. This installation attracted much attention, not only on account of its size, but also because it was the first new mill to be illuminated throughout by incandescent lamps, with no provision for any other illuminant, as all gas piping was omitted.

"In October 1882, the Grinnell Mills, also in New Bedford, ordered three 250-light Edison dynamos, which still are in operation. These are probably the oldest electrical generators now in use.

"The first attempt to operate a calico printing machine by motors was made at the Dunnell Print Works, Pawtucket, R. I., in 1891. Nearly two years elapsed before a suitable method of speed control was devised, by which a range in speed of ten to one was obtained, which was a much wider range than had been possible with individual engines or by cones. This method of control was known later as the "Ward Leonard System," and was generally used until the advent, a few years ago, of the 3-phase, brush-shifting motor. The successful issue of this experimental work was largely due to the ability and perseverance of Mr. Arthur R. Bush, engineer of the Edison Co. for Isolated Lighting, ably assisted by Mr. Edwin Dutton and Mr. George F. Steele. Mr. Stephen Greene, long an active member of the New England Cotton Manufacturers' Association, was the consulting engineer. He became much interested, and cooperated in the experiment. The old printing building was burned soon after the completion of this work. In the new printing building, all of the printing machines were operated by motors.

Famous Columbia Installation

"In 1893, when Mr. Greene was employed as engineer of the Columbia Mill to be built at Columbia, S. C., he was immediately confronted by certain conditions which had not been foreseen by his clients, when the mill site was selected. It was intended that the mill should obtain the power from a canal, which was originally constructed to permit the passage of boats around the rapids in the Congaree River in Columbia. Unfortunately for the mechanical drive, the canal was located between the river and the proposed mill site, which was on an elevation about 700 feet from the canal. To use the canal it would have been necessary to build a penstock from the wheel pit under the mill to the canal, and construct a tail race under the canal to the river. The cost would have been prohibitive.

"There were two alternatives: The mill might be driven by ropes from a power house located between the river and the canal, or a steam plant might have been erected adjacent to the mill. As some of the directors of the mill were interested also in Columbia Water Power Co., which owned the canal, they were naturally very reluctant to adopt the second alternative, and Mr. Greene responded to the suggestion of driving the mill by motors. This appealed to the directors, and an interview was arranged with the treasurer, Mr. Charles K. Oliver. He seemed favorably inclined, and asked where he could see such an installation. He was told there was no such installation, as, so far as known, motors had never been used in the manufacturing departments of a cotton mill. He asked if the whole discussion had been based entirely on theory, and was told that such was the case. He then asked Mr. Greene whether he was prepared "to chance the operation of a million-dollar cotton mill" (as he termed it) "upon a theory." With the experience of the Dunnell Print Works fresh in his mind, Mr. Greene replied that he was.

"The order was placed with the General Electric Co. in August, 1893, covering two 500 kilowatt, 3-phase generators and fourteen 65-H. P. and a few smaller motors. The signed contract was forwarded to the home office for approval. This was withheld, however, as the largest motor of the type specified, which had thus far been built, was of but 10 H. P., and it was recommended that direct current motors be substituted. However, when it was explained why direct current motors could not furnish the uniform speed required by textile machinery, the contract, as originally drawn, was approved, notwithstanding that the bids from the other bidders covered direct current apparatus.

"Many novel features were found in this first installation. The few motors, which had been used before that time in small shops, had been placed on the floor or upon stands. The machinery plans had all been drawn, and all floor space was appropriated for the machinery, but there was sufficient room on the ceiling; so the motors were suspended upside down from the ceiling. For the first time two pulleys were placed on each end of a motor, and from each pair of pulleys the belts drove in opposite directions. This arrangement reduced the number of steps in the transmission, and reduced the strain on the motor bearings. This installation became the pattern for all subsequent group drives.

Long-Distance Transmission

"The success at Columbia led the Pelzer Manufacturing Co. of Pelzer, S. C., to contract in 1894 with the General Electric Co. for three 750-kilowatt, 3300-volt, 3-phase generators, and 2400 H. P. of 550-volt motors, many of which had a capacity of 140 H. P. The power house was located at a water power, developed for that purpose, about 2¾ miles from the existing mills at Pelzer. This permitted the utilization of the hitherto undeveloped water power, and the concentration of all the manufacturing buildings, thus avoiding the building of a new village with its stores, churches, and schools. This installation attracted much attention in electrical circles, on account of the distance to which such a large amount of energy was carried. When it became generally known that the contract had been placed, the market price of the Pelzer stock dropped $25 per share, as the transaction was considered to be "a most hazardous and dangerous experiment." On the day upon which the plant was started, one observer expressed regret that the trial had failed as "the wires leading from the power house to the mill had not moved all day long." Some of the villagers placed pails beneath the wires to catch the electricity if it fell off. Too much credit cannot be given to the management of the Columbia and Pelzer Companies, and also their engineer, Mr. Greene, for their vision and courage. All of these men were members of the New England Cotton Manufacturers Association.

Aided South's Textile Growth

"The success at Dunnell Print Works, followed by that at Columbia and Pelzer, was directly responsible for the development of what has been termed "the electric drive." The installation at Pelzer undoubtedly stimulated the organization of the large distributing systems in the South, which have inter-connecting lines extending from Alabama to Virginia. This development has been, in a large measure, responsible for the rapid growth of the textile industry in that section. In 1925, the Southern Power Co. had a connected load of 306,000 kilowatts, 80% of which was supplied to textile mills. I have a list showing the names of 148 public utilities serving textile mills.

"The census of 1923 showed that 3,000,000 H. P. was required to operate the textile mills in this country, and that of this amount, 2,000,000 H. P. was delivered by motors. The group drive is gradually being superseded by the individual drive, by which each machine is driven by its own motor. During the last five years, very few new mills have used the group drive, except on the carding and suitable motors have been developed for that department.

Individual Loom Motor

"I believe that Mr. Joseph Ott of the Royal Weaving Co. in Pawtucket, R. I., was the first man to use an individual loom motor in this country. On a visit to Italy, he purchased such a motor. This early development abroad was due very largely to local conditions. The hand loom is much more common in Europe than in this country. Before the great war, there were 30,000 hand looms in France. Many weavers, upon leaving the mill, operated a hand loom in their homes. It occurred to some of the public utilities that, if a motor were used to drive the hand loom, a new line of customers might be developed.

Individual Motor of Future

"In conclusion, permit me to indicate what appears to me will be the next important advance in the electrification of cotton mills: For several years previous to my retirement I urged the desirability of operating each machine in the mill by its own 3-phase, adjustable-speed motor. Time will not permit me to enlarge further on this theme, and explain why I hold this opinion. Such motors of 5 H. P. and larger have been used to great advantage in finishing plants. Smaller sizes can be designed, and I believe will be designed when the demand becomes sufficiently urgent."

Story of Ring and Traveler

Summary of Progress Made in the Textile Industry

BY the time Herbert G. Beede was reached on the program the audience had given visible evidence of the effect of the frigid temperature of the room, and so much more time than had been expected had been taken by Mr. Clark's paper, that Chairman Dexter announced that the presentation of Mr. Beede's paper on "The Story of the Ring and Traveler" would be deferred until the afternoon session at the Hotel Biltmore. However, as it was a part of the Thorp session program it is reproduced here in large part:

"On this occasion of the anniversary of John Thorp's invention of ring spinning" said Mr. Beede, "many interesting facts have already been presented. It is evident that a great deal of investigation and research has been made by those directly and indirectly responsible for the celebration. I have carefully followed the many published articles, have studied the patent office records of Thorp's inventions, and was fortunate also in being able to secure a preliminary copy of Mr. Clark's address. At any rate, definite information in regard to Thorp's invention is disclosed by the patent office records, and a more or less incomplete history of the years immediately following the invention of Nov. 20, 1828, has been dug up. I notice, however, that there are many doubts expressed in regard to the final development of ring spinning, while published stories vary considerably. I have always wondered what the real facts might be in connection with the development of ring spinning, and how the known facts could be woven together into a complete story.

"John Thorp, whose original spinning ring and many other inventions are this day commemorated, very clearly anticipated almost every known device used in the modern continuous spinning machines for cotton and other fibers, and evolved many new ideas which were a source of experiment during the years which followed. Thorp was a pioneer and basic inventor, but as happens in so many cases he was either ahead of his time or lacked the facilities and the ability to carry his inventions through to successful commercial use.

"Many people probably imagine that Thorp's invention of Nov. 20, 1828, was the beginning of the present ring spinning frame. Unfortunately, such is not quite the case. It was, however, a remarkable three-in-one invention.

Progress Disclosed by Old Record

"From 1829 until 1844 very little is disclosed in the way of patents which have any bearing on the spinning ring. Let us see what occurred during this period. In going over some of the old records of Fales & Jenks, we find some very interesting information. Unfortunately, however, the information is not complete, but we do know by actual record that in 1830 Fales & Jenks began the manufacture of spoolers and in 1831 the manufacture of cotton spinning frames, mules and thread making machinery. As early as 1837 we find numerous orders for two-beater lappers, and in 1839 we find them substituting copper for wood rolls on wet twisters. There is only one mention of throstle spinning frames and that is an order, March 26, 1839, for four 80-spindle throstle spinning frames built for Olney Hendrick. This latter item indicates that throstle spinning frames were built for some years after John Thorp patented his ring. Whether or not some of the other frames were equipped with the Thorp rotary ring or revolving hook is doubtful in view of Thorp's patent of 1844 and the information disclosed therein.

"Beginning in 1847 the old records prove interesting and are more to the point. These records evidently indicate a transition from the throstle mentioned in 1839 to the ring and traveler mentioned in 1847, and judging by the rings, travelers and general repairs supplied in 1847 it would appear that machinery was being altered to the new ring spinning type rather than that new frames were being purchased of that type, as the first actual mention of ring spinning frames is on Aug. 25, 1848; after that all orders specify ring spinning or ring twisting. Thus we have some actual facts in regard to this period which we at least have always recognized as the actual beginning of modern ring spinning.

Thorp's Patent of 1844

"Returning now to the Thorp patent of 1844 we find the patent disclosure resembles the modern vertical twister ring and traveler in use today with, however, two exceptions; one that the ring was a round section made from wire or other material, instead of the present band or vertical type of ring; the other, that he found it necessary to drill a hole partly at the outer edge of the ring and partly in the holder so that the upper end of the traveler could be inserted in this hole, while the lower end was being sprung onto the ring; after which the traveler was free to revolve without touching the inserting hole. This plainly indicates that the traveler had not been as yet perfected.

"That the present type of ring and traveler was invented by Addison and Stephens in 1829, as stated in some histories, is doubtful. They probably devised an improvement on the Thorp revolving wire traveler, or the ring groove spinner; otherwise, Thorp would not have repatented, or, rather, invented his new form of ring and traveler in Sept. 27, 1844.

"Inasmuch as the Thorp invention of 1828 was tried out in the middle 30's by Mason and Lanphear and doubtless others, and since the patent records show that during the period which followed Thorp was devoting himself to the improvements in his cap spinner it appears quite evident that he had begun to realize that his early inventions were not satisfactory and again turned his attention to developing the ring and traveler as shown by his invention of 1844. The fact that it refers back to his patent of 1828 also indicates this fact. It is natural also to assume that all efforts towards perfecting travelers prior to 1844 must have been along the lines either of the revolving wire or whirling traveler. I believe that much confusion in regard to the ring and traveler has arisen because the original Thorp patent was entitled 'Spinning Ring' and because information available has been very meager.

The Contribution of Alvin Jenks

"Inasmuch as Alvin Jenks was interested during all these years in the manufacture of spinning and twisting machines, it is more than likely that he, like others, was spending some time in the development of the ring and traveler, and it may have been that he began work on it as early as 1831, as has been stated in some histories. Be that as it may, he apparently did not succeed in getting a satisfactory ring and traveler, but

H. G. Beede, Who Spoke at Thorp Centenary Session of N. A. C. M.

undoubtedly with Thorp's invention of 1844 the next step followed quite naturally, and in all probability the spinning ring developed immediately after was of the type which we now use, as also was the twister ring for thread making.

"There is no record that any royalty was ever paid to Thorp or any one else, so that in all probability the rings, frames and travelers as manufactured by Fales & Jenks did not infringe on any prior patent, but were a natural step in advance of everything which had gone before. Both the flange spinning ring and the vertical twister ring are developments of the same basic principle, and it is easy to see how a vital improvement could have been made by changing the form of the ring from that devised by Thorp in 1844 to a form in which the traveler could be applied without inserting by means of a hole. If one reads the Thorp patent of 1844 it becomes very plain that by slightly changing the form and omitting the hole there is no infringement upon the Thorp patent. Thorp also describes in his patent the method of making travelers by winding several turns of wire around a cylinder, or arbor, as we say, of suitable size, each turn forming one ring, which, when cut apart, is formed into a traveler of the desired shape. He also states that, by varying the size of this wire, the weight of the traveler can be varied for different weights of wire. This description alone seems to plainly indicate that no great advancement had been made in the manufacture of travelers up to this time.

"By his invention of 1844 Thorp had approached very closely to the principles involved in the modern ring and traveler, but it evidently remained for some one else, supplied with the proper manufacturing facilities and the necessary ingenuity, to simplify the device and put it in practical form.

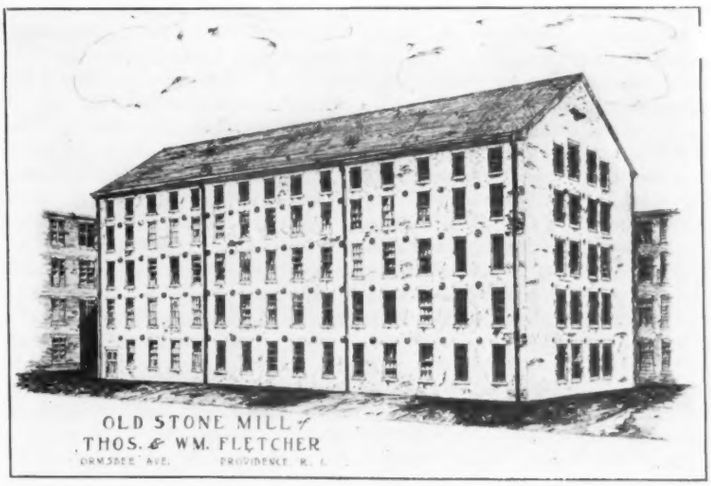
"What is more natural than that Alvin Jenks, who had been trained in his father's machine shop, a business which for nearly 200 years had been handed down from father to son, a man skilled in the handling of iron and steel, especially forging, hardening and tempering, a manufacturer whose product must be salable and satisfactory, a producer and not an inventor, the shop executive of a firm whose product was spinning machinery, still in its early stages, should finish the job and put ring spinning on the market. All available dates and facts seem to justify this conclusion.

"The early histories of Fales & Jenks based on information given out by past members of the firm have always conveyed the fact that they began the manufacture of ring spinning frames in 1845 and of ring twisters in 1846, and, as previously stated, our available records show conclusively the manufacture of rings, travelers and ring spinning frames from and after 1847.

Expiration of Thorp's 1828 Patent

"Two more interesting points remain to be discussed: One, the date of expiration of the Thorp patent of 1828; the other, the question of the early manufacturer of travelers. When the matter of the Thorp celebration was first broached, hardly any facts were known except the patent records of Thorp's inventions, particularly of 1828 and 1844.

"Based on the fact that Fales & Jenks began the manufacture of ring spinning frames in 1845 and ring twisters in 1846, the thought immediately occurred that the date of 1845 meant the expiration of the Thorp patent of 1828 and that, while the Thorp patent of 1844 embodied the use of the hole for inserting the traveler, the twisting and spinning rings actually put in service did not require the use of this hole. This seemed to indicate several things; one of which has been confirmed by Mr. Clark's discovery of the notice in the *Manufacturers' & Farmers'*



Sketch by F. P. Sheldon & Son, Providence, of Old Stone Mill of Thos. & Wm. Fletcher as It May Have Looked in 1829 When Thorp Was Engaged There

Journal of March 9, 1829, warning against infringement.

"It is quite evident that Thorp's backers were good business men, but that during these 17 years from 1828 to 1845 the proper materials, the mechanical methods or ability were not at hand to perfect the operation of the rings and travelers according to Thorp's patents. No other inventions were made during this period which indicate any progress in developing the traveler, but the fact that Fales & Jenks began to manufacture ring spinning and twisting immediately after the expiration of the patent seems to indicate that Alvin Jenks had, in the meantime, developed not only a form of ring and traveler, but also methods for manufacturing and that they were prepared at that time to go ahead, as evidenced by the numerous orders which I have previously cited.

Development of the Traveler

"It has been stated that 'at North Dighton, Mass., in 1837, during a business depression, a throstle frame was changed over to a ring spinning frame. The traveler situation was met by making them from cast-off watch springs, and that the travelers thus made were so scarce and so closely guarded that the operatives used to bend pins rather than hazard a request for travelers from the overseer.'

"It is also stated that 'a machine for making travelers was devised in 1839, but that the inventor is not known.'

"We are also told that Nathan P. Hicks began experimenting with travelers at the Valley Falls Co., Valley Falls, R. I. because the travelers then in use were so unsatisfactory.

"Assuming that these statements

Blank & Stoller

John S. Lawrence, Board of Directors, N. A. C. M.

are true, we must conclude after reading the specifications of Thorp's patent of Sept. 27, 1844, that such travelers were not the type now in use, because they were unable to make them and temper them so that they could be sprung onto the flange, for Thorp describes in very minute detail the type of traveler and the difficulties which he encountered, and his description conforms almost exactly to the whirling traveler described in his patent of Nov. 29, 1828.

"If progress had been such that the modern traveler was then known, Thorp would not have been so specific in his statements or have described so well the difficulties encountered with the soft traveler, and his methods of overcoming it by means of his new ring, which, as previously stated, was similar to our vertical twister ring and traveler; or have described so fully his new method of making travelers by means of wire wound on an arbor. It would appear then that whatever took place between 1837 and 1844 was a development of the early Thorp travelers.

"If Hicks began the development of the traveler at Valley Falls it could not have been earlier than 1839, as the mill was not built until 1839. On the other hand, we do know that he did not begin the actual manufacture

A. W. Dimick, Finance Committee, N. A. C. M.

of travelers in company with Shaw until about 1854.

First Successful Ring Frames

"We have examined the early records of the Valley Falls Co. and its predecessors and we find no trace of any orders for rings, travelers or ring spinning frames either on their records or our own until Sept. 4, 1848, when five ring spinning frames were sold to H. & S. B. Chace, which firm became the Valley Falls Co. in 1853. During the years of 1847 and 1848 according to our records Fales & Jenks were making travelers for a great many different concerns and also rings, ring spinning frames and ring twisters.

"It really looks as though Fales & Jenks was the first manufacturer of successful ring spinning frames and twisters, just the same as Samuel Slater was not the first to attempt the spinning of yarns in America, but the first to make it a business success.

"The ring and traveler having by 1847 come into general use, we find, beginning in 1852 and thereafter, numerous patents on special forms of rings, showing that the development was being continued. Thus we see that the stage was set and that ring spinning had been almost universally adopted with only a few exceptions by 1850. The period from then on up to

Robert Amory, Former President, N. A. C. M., Who Dedicated Thorp Tablet

the present has been one of gradual progress and development, improvement in the rings and improvement in the travelers. It would seem as though such a simple affair as the ring and traveler was not capable of great development, but with the advent of modern methods of manufacture, of new refined alloy steels, of heat treatment and scientific research, I venture to predict that the development has only just begun.

Ring Frame and Mill of Future

"Spindle speeds are on the increase and large size rings and bobbins are demanded. This means a new era in ring spinning and in the rings and travelers to meet the new condition. Modern instruments of observation and precision will discover and produce the 'Floating' traveler, actual cases of which are already under observation, but the complete data or principle involved is not fully understood as yet.

"In view of present day developments and progress, I cannot close without making a comment more or less irrelevant to the subject in hand, but yet of vital importance to all of us: As the change began one hundred years ago and developed new methods and processes, so we are passing today through a period of transition such that the developments of the next few years are bound to be not only interesting but vital. The cotton mill of a few years hence will be quite different from the ordinary type with which we are familiar today, not a relic of the past almost valueless in many cases, but a creation of steel and cement, of large windows and airy spaces, of light and electricity, of fresh air and moisture, and more important still new and better machinery, simplified processes and improved methods. This is not a dream or a prediction, for the trail of progress is well defined."

Dedication of Thorp Tablet

FOLLOWING Mr. Paine's paper, and after Chairman Dexter had announced the carrying over of Mr. Beede's paper to the afternoon session, he introduced Robert Amory, stating that it was an added honor to the memory of John Thorp to be able to present, as the dedicator of the bronze tablet inscribed to the latter's memory, one of the most progressive of the younger generation of cotton manufacturers and merchants, and one who was a former president of the National Association of Cotton Manufacturers and vice-president of The Cotton-Textile Institute—Robert Amory.

The bronze tablet, as previously noted, was set in the wall of the ground floor of the mill at the left of the tower entrance, and was covered with the National emblem. While the general idea of the border, and of the wreath in the top half of the tablet was that of the page honoring John Thorp in the Annual Review Number of TEXTILE WORLD, the tablet wreath was made up of Cotton bolls and leaves, and the whole of the design and text was conceived by Chairman Dexter and carried out under his instructions by the Gorham Manufacturing Co., of Providence. Within the wreath were reproductions of the Thorp ring and hook patented Nov. 20, 1828, and the inscription is as follows: "To commemorate the Centennial of the Granting of a Patent by the United States Government to John Thorp of Providence, Rhode Island, Inventor of Ring Spinning. This Tablet is Erected in His Honor by the National Association of Cotton Manufacturers, April 26th, 1928."

Before drawing the cord that revealed the handsome tablet Mr. Amory said:

"Today the National Association of Cotton Manufacturers meets here one century after the invention of John Thorp, to honor his memory by dedicating this tablet. We should all solemnly resolve that the industry which John Thorp, more than any other man, made possible, shall not languish, but shall gather renewed energy to the end that the textile industry of New England shall regain the leadership to which it is entitled." (Prolonged applause.)

A Bountiful Luncheon

Following the dedicating exercises the major portion of the audience were glad of the opportunity to get outdoors and enjoy the warming rays

of the sun, while a group picture was taken; snaps of the speakers were shot meanwhile, as was a group picture of Thorp's relatives who were present.

The party was then served on the second floor of the Slater mill with a buffet luncheon of unusual excellence, furnished by Cook of Providence, this also being one of the features of the Thorp session that reflects great credit upon Chairman Dexter and his associates on the committee, Benjamin C. Chace and Frederic L. Chase.

Advertising and Cotton Industry

Representatives of Three Types of Media Give Constructive Analysis of Possibilities

IT would have been easy for the Thursday afternoon session of the convention of the National Association of Cotton Manufacturers, devoted to the topic "Advertising in the Cotton Industry," to have fallen far short of its goal. The three speakers represented three outstanding types of media for advertising: Daily papers, outdoor display, and magazines. Each is an expert in his particular field and a firm believer in the possibilities of that field. Consequently, it would have been quite excusable if they had allowed their enthusiasm to run away with them. Advertising is an engaging subject and an audience can easly be hypnotized by stories of its accomplishments in other fields and can be led into the belief that it represents an immediate cure-all for all business troubles.

Fortunately, the speakers did not attempt to "sell" the cotton manufacturers on their respective fields. Instead, they offered their services as impartial observers and analysts whose past experience qualified them to evaluate possibilities of advertising in the cotton goods field. The result was that no member left the convention hall with the erroneous impression that his success depended upon the immediate selection of an advertising agency and the launching of a national campaign. On the other hand, each member who followed the speakers carefully must have left the meeting with a new understanding of the relative merits of the different types of media and with a new comprehension of the background which must be laid before any of these can be employed profitably.

It was particularly fortunate that S. R. Latshaw was the last speaker of the afternon because, although he represented the magazine field in the symposium, he devoted most of his time to a summation of the general problem of advertising cotton goods.

Still another happy circumstance was the selection of Aldrich Taylor, sales promotion manager of the Pacific Mills, as chairman of the session. Mr. Taylor brought to the meeting not only ability as a presiding officer but knowledge of the subject under discussion.

Daily Paper Advertising

THREE necessary factors in any modern use of advertising were emphasized by F. Guy Davis, western manager, Bureau of Advertising, American Newspaper Publishers Association, Chicago, who was the first speaker of the afternoon and who naturally took for his subject a consideration of the place of newspapers in advertising. These three factors, as given by Mr. Davis, are: First, power; second, flexibility; third, economy. In other words, he stated, advertising is a selling force which must be real, and under definite control so that it can be thrown against specific objectives, and finally the cost must be reasonable.

The speaker illustrated the force of newspaper advertising by relating incidents which dramatized the importance of news. He expanded this thought further as follows:

"The best use of the medium of newspapers tends more and more to emphasize the importance of newsiness so that the message of the advertisement can get away with a flying start. Newsvertisements is a term used to some extent to describe a type of advertising that rides on the waves of current news. Literature of the Bureau of Advertising on this point is available to any one interested. This newsiness in copy, even though it may at times appear to be dragged in, gives power to the appeal because of the well known fact that the hunger for news in the average individual is a vigorous hunger.

"A very simple illustration is to be found in the want-ads. The help wanted column, in these days particularly, is the most vital news in the whole paper to the unemployed because it is the news of the jobs, relating directly to the economic opportunities of the day.

"The great mass of local retail advertising presents to the women who buy for the home the news of opportunities developed by the changing conditions on the retailers' shelves. To the normal woman who lives at home and buys for the family, the service of local retail advertising in the newspapers is definitely economic. To the woman of a different type who loves society, sports, stock market news, politics, club life, etc., the newspaper still brings the daily picture of the changing world on which she maps her course. These considerations which are exclusive to the newspaper of all advertising forms are mentioned as being especially pertinent to a group of cotton goods manufacturers.

"As to flexibility there are two equally obvious considerations: First, that the newspaper shares a definite

F. Guy Davis, Who Spoke on Daily Paper Advertising Before Thursday Afternoon Session, N. A. C. M.

geographic flexibility, by which its force can be intensified in logical markets, with many other advertising forms, like billboards, street cars, mail advertising, stunts—with all forms, in fact, eliminating only radio and magazines. In the former, it is limited and in the latter it disappears.

"Second, flexibility in the matter of speed with which the advertising message can be changed to meet changing conditions, reflecting the latest possible aspect of the product, giving the up-to-the-minute picture of prices, styles, models, or whatnot. Flexibility in this respect finds its highest expression in newspaper advertising.

"These considerations are emphasized here not because they can find a direct expression in the average advertising for cotton goods, but because they suggest the general atmosphere in which cotton goods advertising may appear when the newspapers are used.

"In the matter of economy, comparisons are difficult and perhaps not wholly profitable. This much, however, is obvious: All advertising media in the free circulation class have their own methods of measuring circulation. For instance, with the radio, billboards, street cars and mail advertising, the prospect does not pay for the view of the advertising which he presumably gets, with the result that no definitely measurable circulation factor appears. Under the circumstances, comparisons of costs are especially valueless. But we have in the magazines and the newspapers this factor of paid circulation which can be carefully measured and audited—witness the activities of the Audit Bureau of Circulation. It is interesting, therefore, to observe that on the average, newspaper space can be bought for one-half to one-quarter of the cost of magazine space on any fair basis of measurement. This fact can be easily established mathematically.

"It is seen from the above that the newspaper has important and in some respects exclusive advantages in all three of the essential factors in modern advertising: Power, flexibility and economy."

A Universe in Itself

Coming specificially to the question of cotton goods, Mr. Davis admitted that this field is a universe in itself which he has not explored but he stated that there are some indications that it has been under-advertised as compared with other fabrics. "Advertising can, of course, sell cotton goods as it sells nearly everything else," he stated, "and very roughly it seems to the Bureau of Advertising that this might be undertaken in two or possibly three ways:

"First — consideration might be given to the wisdom of advertising cotton or cotton goods institutionally just as many other products have been pushed, like leather, sauerkraut, cranberries, copper and brass, cement, salmon, coffee, tea and other products.

Second—every producer of cotton cloth might think of advertising on one or all of the following lines:

A. Advertising for a trade-marked fabric.

B. Advertising a specialty made of this trade-marked fabric.

C. Advertising of various garments or products made by other manufacturers from the fabric made by the cotton goods manufacturer.

Taking up the question of associational advertising, Mr. Davis reviewed very briefly the results accomplished in a variety of fields, mentioning campaigns conducted by such organizations as the Associated Salmon Packers, India Tea Growers, Institute of

John A. Perkins, Board of Directors, N. A. C. M.

American Meat Packers, Joint Coffee Trade Publicity Committee, and the Portland Cement Association.

He also selected outstanding examples of noteworthy campaigns conducted by individual manufacturers, referring especially to the General Motors Corp., the Westinghouse Electric & Mfg. Co., the Kellogg Co., etc. One of the many interesting facts he mentioned was in connection with the advertising policies of Henry Ford. Stating that Mr. Ford had gone out of the newspaper field for some time, Mr. Davis pointed out that after a long period of thoughtful rebuilding and revision, he came back into the newspapers last fall with an expenditure of $1,200,000 in newspaper advertising in one week and according to a statement by Edsel Ford shortly afterward had booked orders for more than 700,000 cars as a result of announcements which appeared exclusively in the newspapers.

Conclusion

Mr. Davis summed up his remarks as follows:

"The above considerations can do nothing more than to suggest to thoughtful observers the tremendous sweep of the economic forces which are bringing newspaper advertising more and more to the attention of thoughtful business men, and it is our belief that as the greatest modern selling power newspaper advertising can after careful study be given a more important place in the life of the cotton goods field to the advantage of your industry.

"There is no question whatever that we are living in days of rapid change in a much deeper and broader sense than many self-satisfied business men appreciate. When success under a given set of conditions is finally won after hard struggle, the temptation is to relax, fall into routine habits of thought and work, and run along on this basis on the assumption that the world is licked. But sooner or later in a world which is as flexible and mobile as the modern one, new factors enter and new conditions arise which require a re-opening of the study of fundamentals if the best results are to be obtained. I imagine this is true in the cotton goods field today.

"Within the last few days there has come to my attention an important new development involving emphatic emphasis on colored sheets to be accompanied by newspaper advertising and involving an operation which already gives evidence of having big possibilities. This is being watched with a great deal of interest by the most important cotton goods men in the Central West to my definite knowledge and suggests how wide and varied are the undeveloped possibilities in your field and ours.

"One thing is certain: Modern economic forces, including advertising, are annihilating privileges throughout business. This is a part of the democratic hope of our times. The future in the cotton goods field, as in any field, belongs to those who can sense the changing moods of the people and who can adapt their selling and advertising practices to meet the new opportunities which these changes develop, and inevitably newspaper advertising, because of its power and electric flexibility, is going to be more and more in the picture which the living present is sketching for thoughtful observers."

Outdoor and Specialty Advertising

HIS knowledge of the cotton industry, which he modestly claimed to be slight, convinced him that it has problems which cannot be solved by a cure-all, stated Samuel

Ira L. Hill

S. N. Holliday, Who Spoke on Outdoor and Specialty Advertising Before Thursday Afternoon Session, N. A. C. M.

Holliday, of the General Outdoor Advertising Co., whose talk on "Outdoor and Specialty Advertising" was the second feature of the Thursday afternoon session of the convention.

Mr. Holliday first emphasized the absolute necessity of a brand if general advertising is to be employed. In the cotton industry, he remarked, the brand must be on the selvage, or in the case of towels on the hem in the form of a label. A great many New England mills, he stated, are far divorced from the ultimate consumer. There must be a "carry-through" if advertising is to be possible.

Stating that in cotton goods advertising the surface has hardly been scratched, the speaker pointed out that in towels and sheets the average woman is becoming acquainted with brands. The manufacturer, he added, must study this average woman or consumer. She has changed her buying habits decidedly in recent years. Price, in his opinion, is not extremely important—style being the principal factor. He recognizes cotton manufacture as full of advertising possibilities but selling ideas are needed. The field is wide open, he stated, for trademark leadership.

Mr. Holliday gave as the three essentials for successful merchandising "good goods, good selling and good advertising." It is particularly necessary that the manufacturer know his markets. In the speaker's opinion, at least four or five months of work must be done before a campaign is started.

Referring briefly to his own field, he stated that there is a five year program of refinement now under way in outdoor advertising. Locations are being redeveloped and bill-boards are being improved. The value of outdoor advertising is increasing for that reason; and also because we are becoming more and more an outdoor nation. He mentioned the three main types of such publicity, namely—the poster, the painted display and the electrical display. He is confident that some day textiles will be widely advertised by means of poster advertising.

Possible Results

Assuming a cotton manufacturer with a trademarked product going through to the consumer, Mr. Holliday recognizes the following results:

1. Standardized production.
2. Many economies.
3. Most important of all, manufacturer has control of his own business and knows his market from year to year.

New England, he stated, needs more industries like Clicquot Club, Gillette, Lever Bros. and others who have "sold" the public on their goods.

Magazine Advertising

ALTHOUGH S. R. Latshaw, president of the Butterick Publishing Co., New York, was scheduled to speak on "Magazine Advertising," he said very little on that subject but a great deal about the new attitude which must be achieved in the cotton goods industry if any kind of advertising medium is to be employed successfully. In other words he recognized that the essence of the symposium was not the discussion of advertising media.

He won the immediate approval of his audience by the utter frankness with which he spoke. When he stated that textile manufacturers as a class are self-satisfied, his hearers, rather than being offended, recognized this as a worth-while opinion by a man who has had an opportunity to judge them.

Mr. Latshaw's remarks follow in part:

"The textile industry in this country is so large, so old, there is so much invested capital, so many hands employed, and so varied an output as to make sweeping generalizations more than normally inaccurate. Even with a rigid attempt to delimit the subject I touch upon this afternoon, I realize the futility of attempting anything comprehensive.

"As we are asked to discuss a phase of advertising in the cotton textile field, we may at once eliminate from consideration cotton knit goods, which because of their finished character and method both of purchase by the consumer and convenience in selling by wholesaler and retailer, were the first to adopt a trade-mark and advertising.

"Some of your woven cotton textiles that enter into the field are likely to remain unidentified and unadvertised to the general public. Fabrics for the making of sails, automobile tires, imitation leathers, tickings, denims and the like, will, as I say, probably continue unheralded and unsung. Some staples, generally sheets and sheetings, have been and will continue to be profitably advertised.

"With your permission, we have left then to consider cotton dress fabrics, at present purchased by the Potashs and Perlmutters for the making of ready-to-wear garments, or moving for sale through wholesale and retail channels to the ultimate consumer as yard goods to be manufactured into garments through home sewing, or through professional dressmakers.

"In the last quarter century, the ready-to-wear industry has grown amazingly, and in my opinion, will continue to grow, but at a rate somewhat retarded. 1925, for example, showed a loss of 4½% as compared with 1923.

"The restriction of immigration, the perennial unrest in the needle trades, the continually shortening style cycle with attendant necessity of large retail mark-ups, to provide for the almost inevitable mark-downs, have contributed to the necessity for mass production in the cutting-up trade.

"With the inevitable standardization of women's styles thus indicated, little place is left for the woman unable to wear garments cut to the flapper figure or who demands some individuality in style, some departure from the uniformity of a robot. The tendency seems apparent that the adoption of quantity production leads to a skimping both in quantity and the quality of the fabrics employed and in the workmanship as well. This tendency complicates the difficulty of a textile manufacturer advertising his trade marks in conjunction with ready-to-wear, if he must share, however unjustly, any portion of criticism that may attach to scant measure or poor workmanship in the finished garment when known to be made of his material.

Changes in Distribution

"When I addressed you before, I predicted some changes then impending with wholesalers and jobbers. Since that time one of the great jobbing houses has liquidated and another has changed, in part at least, its character by the purchase of manufacturing properties and thereby has become a distributing manufacturer. The textile jobber, as the years go by, serves a slowly decreasing territory and becomes in function more nearly automatic.

"The great department stores, while really no more cordial to national trade marks than before, have found in many lines that expediency dictates an acceptance of the lesser sales cost of selling a trade-marked nationally advertised commodity, which if not actually 'in demand,' at least has acquired a consumer receptivity or acceptance which facilitates selling to an extent to offset the desire of the merchant to handle only goods under his own trade mark or brand name. Today, the largest department or dry goods stores do not welcome the new line with open arms. They never have, and in my opinion never will. On the other hand, the stores' reluctance is not fundamental, unified nor constant.

"While antiquated distributing machinery, passive resistance by the largest merchants, and possibly some over-production, may seem important factors in the decade that has passed, I believe that the chief liability of the dress goods manufacturer in cottons has been the superior competition in style from makers of silks, rayons and other newly developed fibers.

"I have known something of textile mill conditions for the last 20 years. From the standpoint of an outsider, it seems clear to me that the general shortcomings have been in design rather than in the raw material, the manufacturing or labor.

"I am not now saying, or never have said to you gentlemen that advertising would have been or is a panacea. For the sake of clarity, I am even willing to go so far as to say that I do not believe advertising should be used except for the exploitation of goods that would sell without advertising.

"It seems to me clear that at retail, dress fabrics are purchased by women and that if advertising of dress fabrics is to be undertaken by an individual manufacturer or by an association of manufacturers, the messages should be directed with maximum result and minimum waste to the woman who buys for the home. If advertising is to be done on a national scale, it would seem to me that the women's magazines of large circulation should be selected as the first line of approach. Probably I am biased in this matter, but in any event, I am sure that the consideration of the selection of the media in which advertising may appear is at most secondary in the problem. It seems to me that the primary consideration should be—what are you going to advertise and how?

The Market

"It seems impossible to get dependable statistics of sufficient comprehensiveness to be indisputable. However, with what indices we have, it is a safe hazard that the total retail sales of piece goods in the United States run more than one billion dollars per annum. The United States Census Bureau on retail sales in twelve cities for 1926 reported: woolens, 10%, cotton piece goods, 38%, silks 44%, rayons 8%. So that we may say that the present market for cotton piece goods at retail in the United States amounts to more than $380,000,000 per annum.

"With exceptions of two months, every month since December of 1925 has shown a decrease in the retail sale of cotton piece-goods over the corresponding month of the previous year. This is based upon reports from 500 department stores to the Federal Reserve Board. It is encouraging to note that in February of this year this same source reported a gain of 3.3% for cotton goods, although it showed a loss of 2.1% for silks and velvets, a loss of 6.2% for woolens and a loss of nearly 2% for rayons.

Must Sell as Well as Make

"The road to the solution of your problems does not lie in the study of statistics nor in concentration on problems of manufacture. Historically the textile manufacturer has considered himself primarily a mill man. He has concentrated on buying, weaving, dyeing, printing and finishing and until 20 years ago, in the majority of cases, he delegated his selling. In many instances he still delegates his selling. The new industries that have sprung up in the last few decades, such concerns as Campbell's soups, National Biscuit Co., Simmons beds, the entire automobile industry, most of the packaged foodstuff manufacturers, even the cooperative growers of Sunkist oranges, Sun-Maid raisins and the like, have not only undertaken the production of goods but have assumed the problem of selling them. Campbell not only makes the soup but sells it, although technically the sale is *consummated* by the retail grocer.

"Fifteen years ago I talked to a mill treasurer with a capacity at that time of 50 miles of gingham an hour. I tried to interest him in the women who consume his goods. I made no progress whatever. I was assured that his line was closed two hours after its opening. I asked this gentleman who purchased his goods. His reply was the 'the jobber.' I asked him if he was interested to whom the jobber sold or where or how and his answer was a complete negative.

"Within the last year or two I was talking to the treasurer of a southern mill with more than 25,000 hands employed, and in asking him about his apparent success he told me that with his new magazine looms he had a 15% greater efficiency than some of his northern competitors. This lay in manufacturing. It was in manufacturing improvements that he was primarily interested.

"However reluctant the textile manufacturer may be to assume the problem of selling his goods, I believe that it is necessary.

"The concern with which I am associated started in Fitchburg, Mass., 65 years ago. We have sold and do sell to women in every civilized country in the world. We sell paper dress patterns to facilitate the making of garments for women and children out of piece-goods. We sell them from pictures of dresses. Our principal task is to sell more piece-goods in order that we may sell more plans or patterns for the making of piece-goods into garments. Our sales run into tens of millions of individual transactions with women in the course of a year and we never have attempted to control these women's purchases in any way. We have, however, watched their method of buying and we know that for some mysterious reason they all do the same thing at the same time. Just why they should want short skirts or long skirts or narrow or wide may be a mystery, but that they all want the same thing at substantially the same time is statistically demonstrated.

S. R. Latshaw, Who Spoke on Magazine Advertising at Thursday Afternoon Session of N. A. C. M.

"How many textile manufacturers do you know who are studying style tendencies, trends, or even more than that—how many of them know actually what is transpiring at the moment?

"However, let us pass that. Assuming that the manufacturer does study style tendencies, does keep abreast of the change in women's demands or whims—and remember the truth that lay in one man's assertion when he said 'My wife has a whim of iron'—there is a great deal that can be done to stimulate the increased consumption of dress goods. The most intelligent effort that I know of in this direction is one recently launched as a Bureau of the National Retail Dry Goods Association—to be called the 'Costume Art Association.' I commend your attention to the work of this bureau and the opportunity that lies ahead of it.

"With piece-goods representing 10% of the department store sales, merchants are naturally interested in their promotion. The department and dry goods stores in fostering this movement are not interested in pushing any particular fabric or any particular weave, and certainly no particular line or trade mark. The merchant is, however, interested in increasing sales and the stimulation of an increased consumption of piece-goods. Against that laudable ambition I trust you will interpose no objection.

New Uses

"One of the leaders of the old Standard Oil Co. told me years ago that if the history of the Standard Oil Co. were ever truly written, luck should be given its part in the story. When kerosene was the main product from petroleum, gasoline was literally a drug on the market. The problem was how to dispose of it. They even had lots of trouble with the authorities when they threw it away and the bay at Bayonne would not infrequently catch afire. Then came the internal combustion engine—not an invention of the Standard Oil or even fostered by them. It created eventually an enormous market for gasoline which had heretofore been an almost negligible by-product. It also created a tremendous demand for lubricating oil. It relegated kerosene almost to the former position of gasoline. Then some bright genius, and he was not in the Standard Oil Co., suggested that they heat homes with fuel oil, and that they improve the roads by pouring the residuum oils over them as a binder.

"What new uses can you develop for cotton piece-goods? The company with which I am associated has developed and is developing new uses. We have furnished and are illustrating and describing an attractive room in which the wall covering and the hangings are identical in material—a very charming print. If you are to compete with any fair degree of success with the wall paper manufacturers, you might find outlets for many additional millions of yards. This is but one of a great many suggestive uses that have been evolved and are being evolved. But, it all comes back to the same thing that I am reiterating, and that is, that the textile manufacturer, however reluctant, must become a merchant—he must market his goods himself just as does the maker of linoleums or carpets.

Media Discussion Premature

"You will realize that I have completely side-stepped the topic that was assigned to me—to appear as a proponent for magazine advertising. I think that any attempt to discuss with you the relative value of media at this time is entirely premature. As an association I cannot see that you have an opportunity for unified advertising because of the great diversity in your products. Therefore, I hesitate to even suggest association advertising. As individual manufacturers each problem is peculiar unto

itself, but there is one thing I think all of you have in common and that is the necessity for continuous, intelligent concentration on the problem

Morgan Butler, Former President, N. A. C. M.

of increased consumption. It can be done. A friend of mine, early in this century, was asked to solve the problem of advertising coal tar. Can you fancy anything harder? Well he did a fine job in the formulation of a selling idea for Barrett Specification Roofing, and later in the extension of the product under the name of Tarvia for use on roads.

"The decrease in home baking seemed to threaten the Fleishman Yeast people. New uses for yeast were exploited to the great increase in total business of the Fleishman company. Furniture polish that was sold in eight ounce bottles to be rubbed a few drops at a time on a piano or a chair found a new use. The product was sold by the gallon to be rubbed on the floor with a mop.

"You may feel that competitive conditions are keen in your industry; so are they in food stuffs. Our average capacity is some 3,500 calories a day. The grower, the manufacturer, the packer are all in competition for the capacity of the human stomach. When the possibilities are intelligently studied and cultivated as in the case of Sunkist Oranges, they succeed in getting an increasing measure of business against the lower priced but complacent or indolent competition of prunes, apples and the like. The Sunkist Orange people put out an extractor for juice at the soda fountains and greatly increased the consumption of their oranges and lemons. They are now putting out an extractor unit for the homes, and if they are successful they will further increase consumption.

"What are you doing to study the market as it now exists and what are you doing to increase consumption? If you were a maker of building materials would you be interested in what architects were putting into their plans and specifications which they were selling to home builders? Do you know or care what the trade is recommending to women and what women are doing about those recommendations with respect to the purchase of piece-goods? Do you think you can continue the next quarter of a century, to delegate your selling problems to others? I question whether you can advertise successfully as a group. I believe that some of you may be able to successfully advertise individually, but whether as a group or as individuals, it seems to me that your first problem is to study ways and means of increasing consumption. And, that means a study of the market as is, and how it may be influenced favorably toward your fabrics."

Would Amend Farm Relief Bill

N. A. C. M. Resolution Recommends Inclusion of Cotton Goods in Measure

FOLLOWING the conclusion of the session on advertising, an important matter of business was presented

Russell B. Lowe, Former President, N. A. C. M.

to the convention by Robert Amory, in the form of a recommendation from the Board of Government. Declaring the present McNary-Haughen bill to be uneconomic, unsound and that it will not afford the relief to the farmer for which it is designed, the recommendation urged adoption of an amendment which would include the cottom mills in the measure now before Congress in order to protect the cotton farmers' chief market. Offered as a motion, this was passed unanimously and Philip I. Dana, vice president of the association, Wm. B. MacColl and Robert Amory, former presidents, were appointed a committee of three to urge the adoption of such an amendment by Congress and to bring the situation to the attention of the members of the House and Senate.

The resolution follows:

"The Board of Government appreciates the unfortunate conditions which have adversely affected the position of the farmer but believes that the present bill is uneconomic, unsound and will not afford the relief to the farmer for which it is designed. Furthermore, certain features of the bill if put into operation would so seriously affect the cotton manufacturing industry as well as other branches of the textile industry as to cause serious depression if not actual disaster.

"If, however, this type of legislation has prospects of favorable consideration by Congress and the administration the board believes that an amendment should be offered by which the textile industry, whose interests are very closely related to the farmer would not be so seriously damaged. The damage thus caused to the American textile industry, the cotton farmers' best customer would in turn react on and seriously damage the cotton farmers themselves. The amendment suggested is that of including cotton goods within the operations of the act and to apply the equalization fee plan to cotton goods in respect to both imports and exports.

"Following are outlined some effects upon the textile industry which would result from the enactment of the legislation passed by the Senate and now before the House and also what might result if the amendment to include cotton goods was adopted.

E. Kent Swift, Board of Directors, N. A. C. M.

"The present bill provides that raw cotton be exported at world market prices which means at prices below those current in the domestic market and that the losses on such exports of cotton would be made up out of equalization fees collected on sales of cotton to domestic market and that the losses on such exports of cotton would be made up out of equalization fees collected on sales of cotton to domestic mills. In effect this means that foreign mills could secure American cotton at prices less than that paid for it by domestic mills.

"Foreign mills, therefore, could convert the American cotton into yarns and cloth and because such were made out of cotton obtained at prices oftentimes considerably below that paid for it by domestic mills, could export these yarns and cloths to the United States at prices low

C. F. Broughton, Board of Directors, N. A. C. M.

enough to compete with the yarns and cloths from American mills in spite of any tariff. Furthermore foreign mills would make yarns and cloths out of their cheaper American cotton and export them to the world's markets in competition with American exports of such commodities thus almost entirely killing our own export trade in cotton textiles which now amount to nearly 600,000,000 square yards a year.

"The disastrous effects of the operation of such a law on the chief consumer of farm products has been recognized in the provisions for the protection of the packers and flour mills, their most important customers.

"The flour mills and the packers process and distribute grain and animal products. The cotton mills process and distribute raw cotton, the product of the cotton farmer. The cotton mills should therefore be included in the McNary-Haughen bill in order to protect the cotton farmer's chief market.

B. H. Bristow Draper, Board of Directors, N. A. C. M.

"In view of the serious consequences to the textile industry which would follow from the operation of the McNary-Haughen bill as now before Congress

TEXACO — For Dependable and Economical Lubrication — TEXACO

Showing How

TEXACO LUBRICATION ENGINEERS

help reduce Power Costs

TEXACO Lubrication Engineers know their job.

With utmost confidence and promptness — regardless of the type of machine or conditions — they have been able to suggest ways and means of cutting lubrication costs, improving machinery operation, increasing production and enhancing profits.

In one Textile Mill the start was made on the spinning frame spindles.

There, our engineers volunteered to reduce the temperatures by replacing the oil used with TEXACO Spindle Oil.

This was agreed to, and all of the frames were lubricated with Texaco Spindle Oil — with the exception of 12 frames which were left with the ———— Company's oil, a product of high quality.

After the change, it was found that the spindles lubricated with TEXACO Spindle Oil were decidedly cooler than those lubricated with the old oil.

And we went even further:

We put TEXACO Spindle Oil on *one side* of the 12 frames using the old oil, and *in ten minutes* the temperature of these spindle bases also dropped.

In the end, friction was considerably reduced, and a material saving in power effected.

This shows only one of the many possible ways in which you may benefit by calling (without obligation or cost) upon the services of our Textile Lubrication Engineers.

And, you will find, as many mills attest, that TEXACO TEXTILE LUBRICANTS are of the highest quality, and the most economical to use.

There is a **TEXACO LUBRICANT** *for every purpose in the* **TEXTILE** *industry*

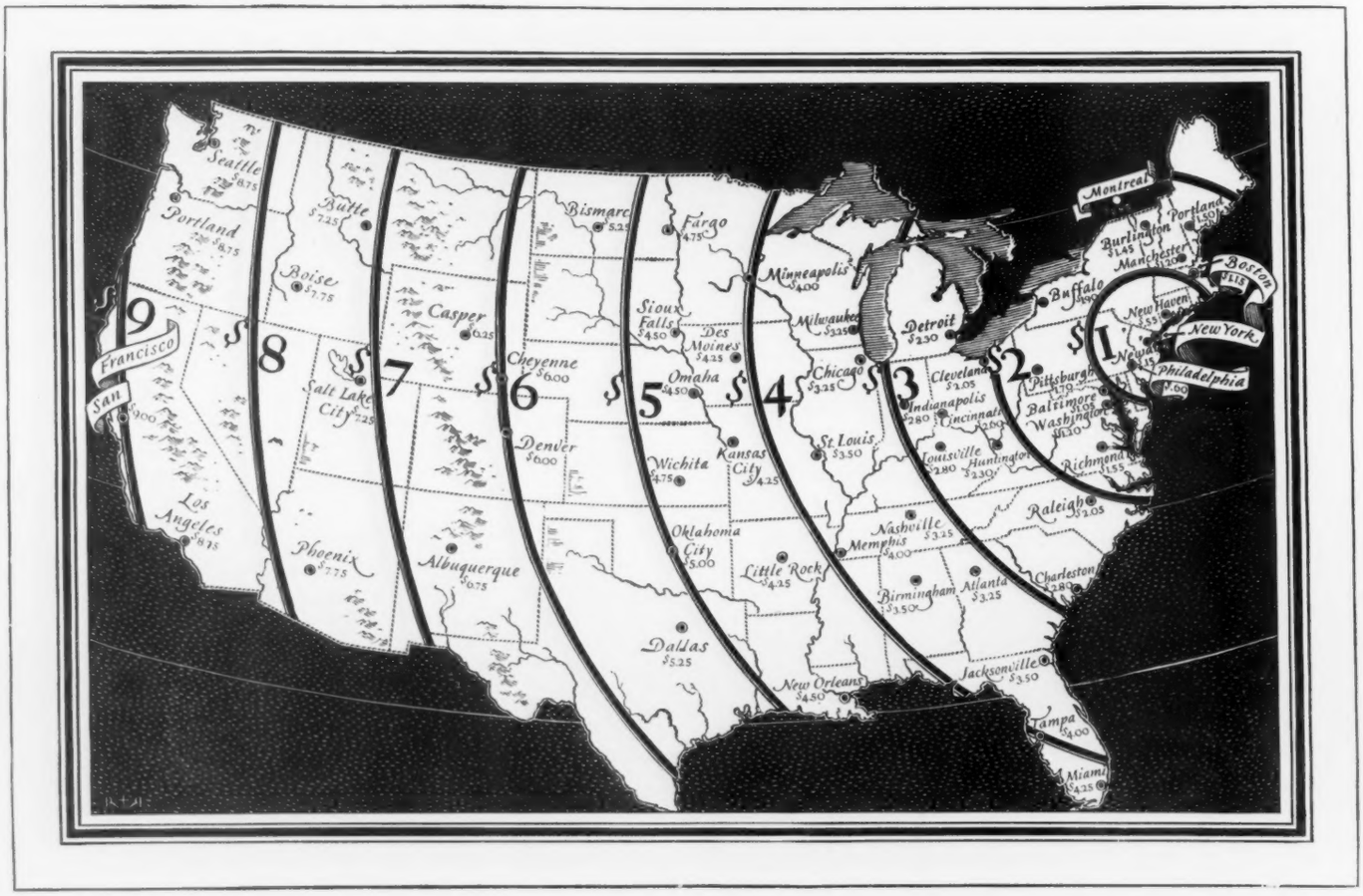
THE TEXAS COMPANY

Texaco Petroleum Products

Dept. T5, **17 Battery Place, New York City**

OFFICES IN PRINCIPAL CITIES

Coast to Coast now only $9.00
Cleveland to Pittsburgh 80¢



An Advertisement for Bell Long Distance Telephone Service

THE station to station day rate for the longest telephone call you can make within the United States is now only $10.00. From San Francisco to New York is only $9.00. From St. Louis to Chicago is only $1.45. From Newark to Philadelphia is only 60 cents.

An average of 2,614,000 toll and long distance calls are now handled daily by the Bell System. The purchasing agent of a large western manufacturer called his general storekeeper from New York, 2800 miles away. He secured information that enabled him to make a purchase saving his firm $250,000.

The Cheyenne, Wyoming, manager of a farm machinery house made seven long distance calls to Nebraska and Colorado points. Within an hour's time he sold 25 threshers for $50,000.

A Missouri fruit company calls each of its dealers at regular intervals and gets their orders by Long Distance.

The time and money saved by Long Distance is summed up by a Chicago lumberman. He says: "The toll to Milwaukee is 80 cents. Average cost of making the trip, $10.00. Detroit toll is $1.80. A trip would cost $25.00 or more."

What calls to firms in distant cities can you profitably make now? You will be surprised how little they will cost. . . . . Calling by number takes less time. . . . . *Number, please?*

AMERICAN TELEPHONE & TELEGRAPH CO. AND ASSOCIATED COMPANIES — BELL SYSTEM

your Board of Government recommends that this association urge the adoption of such an amendment and that a committee of three be appointed to bring this situation to the attention of members of the House and Senate."

During the discussion which preceded the unanimous passage of the motion, Ward Thoron, treasurer of the Merrimack Mfg. Co., pointed out that the remedy suggested in this recommmendation was the only one which the Board of Government could think of. He pointed out that it would be much better if the bill did not go through at all but added that, if it did, this protection should be demanded. The effect of the protection, he stated, is problematical but it must be given a chance.

Sam Lamport, of the S. C. Lamport Co., New York, stated that in his opinion there is no menace which has anything like the gravity of this proposed legislation. One of our great hopes as a panacea for the ills of the cotton industry, namely, foreign markets, is being snatched away from it, he stated.

Notables at N. A. C. M. Banquet

Governor of Rhode Island, Mayor of Providence, Walker D. Hines and George Harris Speak

THE presence of the governor of Rhode Island, the mayor of Providence, the president of The Cotton-Textile Institute and the president of the American Cotton Manufacturers' Association made memorable the banquet held Thursday evening of last week, which concluded the convention of the National Association of Cotton Manufacturers.

Acting as toastmaster, President G. Edward Buxton spoke very briefly of the problems confronting the industry and expressed his belief in the courage and vision with which these will be met.

"Cotton mills must control and formulate merchandising policies which harmonize distribution with production," he stated.

"Costs must be predicated on estimated sales and not on a mythical schedule of full operations which cannot be achieved. Style must be recognized as a factor, and markets must be cultivated with intelligent energy.

"A thoughtful observer of our industry cannot but see hundreds of independent corporate units, endeavoring to maintain high production schedules irrespective of market conditions; persisting in mutually destructive price wars which check, rather than stimulate demand.

"A style era imposes upon us the twin problems of obsolescence and hand-to-mouth buying. The insistence upon immediate delivery of small orders requires the maintenance of open stock inventories and the risks of style change or a sharp decline in raw material. East of us comes the ominous rumble of Europe, with wages and standards far below our own; a Europe which must eventually pay us in goods or be hard pressed to find the interest on money borrowed during the war or in the reconstruction years that followed.

"I do not doubt we shall accept this challenge. This is a period which calls for courage and new methods and open minded team work, from sales and production managers and operatives alike."

Welcome from the Governor

In welcoming the members and guests to Rhode Island, Governor Norman S. Case paid tribute to Walker D. Hines, George S. Harris and Col. G. Edward Buxton, a citizen of his State who had been chosen to lead the association during this critical period of its industry.

Recognizing that New England is in a terrific fight for existence, that many old firms had been liquidated, and that the South is forging ahead, the Governor spoke of the need for mental flexibility and courage. Rhode Island, he stated, has long been a State dependent on its industries and he believes that the cotton manufacturers realize the necessity of protecting their employes. He reaffirmed his belief in the principle of a protective tariff to insure the worker a chance to maintain his higher standard of living.

John F. Reardon, Chairman, N. A. C. M. Banquet Committee

He referred briefly to the many serious problems which confront textile manufacturers, and in fact producers in all industries, but closed on a note of optimism by expressing his belief that New England would "come back".

Mayor James E. Dunne of Providence confined his remarks to a few words of welcome and brief reference to the background of Rhode Island's cotton manufacturing industry as exemplified in the centennial of John Thorp.

Walker D. Hines, President of The Cotton-Textile Institute, Who Spoke at Banquet of N. A. C. M.

The Cotton-Textile Institute

Walker D. Hines, president of The Cotton-Textile Institute, took advantage of the opportunity offered by the presence of such an extensive and representative body of New England manufacturers. He outlined the basic activities of the Institute and urged continuation of the spirit of hearty cooperation which he has found in that section of the country. His remarks follow in part:

"When I was called upon to become the first president of the Institute, I was confronted with a task for which there was no precedent in the industry from the standpoint of country-wide scope of the work and very little precedent from the standpoint of the subjects to be dealt with. But this statement calls for one important exception. The mills which sell their products through commission houses had begun, after the war, to develop a measure of cooperation through the activity of the Association of Cotton Textile Merchants of New York and this activity had manifested itself particularly in the gathering of statistics as to production, stocks on hand, sales and unfilled orders. The Institute at its beginning found these statistics already well developed and has been glad to do everything in its power to promote the gathering and use of statistics of this character. In the main this work continues to be handled by the Association of Cotton Textile Merchants, but in the cases of wide sheetings and carded yarns, the Institute itself has undertaken the compilation of such statistics and their distribution to the members which participate in supplying them.

"One of the principal objects of these statistics is to aid the mills in keeping informed as to whether production is keeping pace with demand or is overrunning or falling behind demand. Last winter the existence of the statistics served to put the mills on notice as to the slackening of demand and supplied the basis on which a great many mills began to readjust their production so as to keep more clearly in balance with the demand. As a result of the information thus developed for the mills, there has been a substantial, and I believe, a still increasing effort to strike a proper balance in this respect. My hope is that in the future there will be increasing vigilance to deal intelligently and promptly with such situations so as to promote that stabilization which is so highly desirable from the standpoint of all interests affected, including the customers of the mills as well as the mills themselves.

Cost Information

"Another of the important activities of the Institute is the stimulating of interest in obtaining accurate and adequate information as to predetermined costs to serve as a guide to sound sales policies. In numerous branches of the industry our cost engineer has conducted meetings attended by the cost representatives of the mills with the result that there have been extremely valuable discussions of the principles or bases which should be employed, and these efforts have, I believe, greatly stimulated interest in the subject. We are now on the point of issuing an outline of the principles or bases which the best expert advice indicates the mills ought to take into consideration in predetermining their costs. We expect to distribute this outline to all our members and we hope it will encourage a careful re-examination of cost finding methods. I fully appreciate that many of the mills have entirely adequate and accurate systems of cost finding, but I have been repeatedly assured that this is not

George S. Harris, President of American Cotton Manufacturers' Association, Guest at Banquet of N. A. C. M.

true of all the mills and I am anxious to see a very general re-examination of this subject so as to encourage the adoption of whatever improvements may be necessary in each particular case in order to arrive at the proper results.

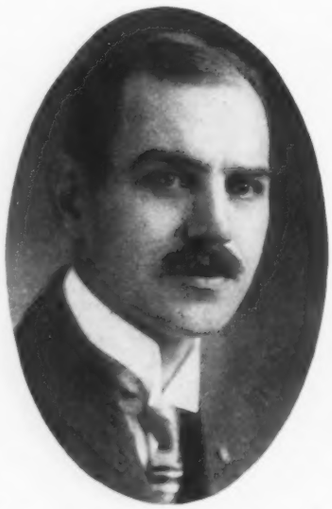
"I also hope that this re-examination will bring the mills more nearly together as to the principles employed. In the nature of things, the costs at different mills would be different, even if principles were precisely alike, because the basic facts which control the costs would be different. Yet if the principles are the same, each mill can feel reasonably sure that its costs are accurately expressive of its own facts and that it has not overlooked items which must be considered in order to arrive at correct cost estimates.

"Further than that, I hope the mills in a particular branch of the industry will to an increasing extent, become interested in making, either directly or through the Institute, comparisons of their respective costs. I believe this will be of great value from a merchandising standpoint as well as from the standpoint of efficiency of manufacture. Such comparisons can be arranged through the Institute without showing the name of any particular mill, so that the identity of the data will remain entirely confidential and yet the results of different mills can be compared in a manner that will be enlightening and stimulating to all.

"It is my intention to bring about very shortly a series of meetings in the different groups with a view to encouraging such comparisons as a matter of example and in a preliminary way. I hope these meetings will serve to concentrate the attention of the mills upon this subject at the present time and will not only prove enlightening to them with reference to the conditions of the moment but will furnish additional impetus toward a thorough restatement of the problems of costs.

Group Organization

"I wish now to refer to what I regard as one of the very fundamentals of the Institute's work and that is the promotion of meetings of the members in groups organized according to types of product, so as to study and discuss all of the Institute's activities which are of interest to the respective groups. I regard such meetings for discussing these subjects as the foundation of successful association work. Of course, our industry is too great to admit of bringing all the membership, consisting of several hundred mills, into frequent meetings and besides the problems of one branch of the industry are very different from those of another. But when we divide the industry up into groups we find each group has common problems and we find that the membership in that particular group is small enough to admit of getting the members together for study and discussion. In the past, I believe, there have been far too few meetings of this character. I think one of the things which the industry seriously needs is for members engaged in making the same product to come together more frequently, get much better acquainted, so that each member can learn at first



R. B. Watrous, Member N. A. C. M. Banquet Committee

hand to understand more clearly and accurately what the others in the group are doing. The closer the acquaintanceship and the franker the discussions, the more nearly will the industry as a whole understand its problems and appreciate how they ought to be dealt with in the better interest of customer and manufacturer alike.

"One branch of the industry which is of particular importance to the mills of New England is the fine goods branch. The Institute has not progressed as rapidly in this as in other large subdivisions of the industry because it felt that the field was already occupied to an important extent by the Fine Cotton Goods Exchange, with which we have enjoyed most cordial relations. However, following a largely attended meeting called jointly by the Exchange and the Institute, it was understood that the Institute would aid the work of the Exchange by providing some group organization for the Institute's fine goods members not functioning through the Exchange, and that such a group would deal with those matters which the Institute undertakes to promote and in doing so would, to that extent, be useful to corresponding work done by the Exchange. We are planning for a meeting of this character at an early date, and we hope that it will lead to closer and even more cordial relations with the Fine Cotton Goods Exchange. Whatever we can accomplish in this way will promote the same objectives as have been sought in connection with our other group work, that is the promotion of better acquaintance, mutual and frank study and discussion, and a better common appreciation of the problems of the particular branch of the industry.

"In concluding, I wish to take advantage of this hospitable occasion to express my gratification for the cordial support the New England mills have given my work and to urge them, and you, as their representatives, to give me every opportunity to be of assistance and to do everything practicable to encourage participation in the Institute's work and primarily participation in the development and conduct of group activities."

The South Represented

It was particularly fortunate that George S. Harris, president of the American Cotton Manufacturers Association, was on the program of speakers not only because he brought the greetings of manufacturers in the southern section but because he enabled the banquet and the convention to close on a note of constructive optimism.

During his remarks he referred to the menace of the proposed McNary-Haughen legislation, stating that he naturally can appreciate the necessity of some kind of farm relief but that he is fearful it may tear the cotton industry into shreds while it is being effected.

Speaking of the pricing of goods, Mr. Harris admitted that manufacturers in the South are doing just exactly what New England producers are, namely, choking themselves to death with their own competition. He remarked that our vocabulary had been increased by the addition of the term

Fred W. Steele, Board of Directors, N. A. C. M.

"profiteering" during the war and "profitless prosperity" in years following the war. Now he recognizes another addition in the "deficiteer" whom he described as a man who prices goods below an adequate profit level. He feels that this type is more dangerous than the profiteer.

Speaking of Walker D. Hines, president of The Cotton-Textile Institute, Mr. Harris remarked humorously that he would give to Mr. Hines: (1) A messenger; (2) a persuader; (3) a man with a club; and (4) a man with a gun. Becoming serious, he expressed his belief in the wonderful possibilities of the Institute and stated that in his opinion it really can save the life of the cotton manufacturing industry.

Cotton Urged for Grocers

E. C. Morse Describes Use for Bags and Containers

Advantages of cotton cloth for bagging and containers were emphasized by Ernest C. Morse, in charge of the New Uses Section of The Cotton-Textile Institute, Inc., who spoke recently at the annual convention of the American Wholesale Grocers Association.

"Results of inquiries which the New Uses Section has made are particularly pertinent to the grocery trade," he said. "Shippers and dealers who have handled goods in cotton containers have reported that these make a more attractive package; provide greater visibility for distinctive markings; in many instances are more durable and stronger than any other material of similar weight; and are more protective because they do not readily absorb moisture.

"In addition to these advantages, larger cotton bags have a re-use or re-sale value. In some instances this may amount to as much as 8 or 10c a bag."

Technical studies are now under way to ascertain if a cotton bagging can be made suitable for shipping rice. This would require a fabric of peculiar construction which would permit the insertion of a "trier" for sampling the rice without damaging the bag. Mr. Morse also said that an effort is being made to make a satisfactory cotton fabric which can be used to cover barrels in shipping potatoes and other vegetables.

Edgerton to Address Phila. Textile Alumni Association

PHILADELPHIA.—J. E. Edgerton, president of the National Association of Manufacturers, will be the principal speaker at the annual banquet of the Philadelphia Textile School Alumni Association, which will be held June 8, at the Manufacturers' Club, Broad & Walnut Sts., according to an announcement made by Bradley C. Algeo, president of the Alumni Association. Souvenirs to be distributed at this dinner will be furnished by Albert C. Kluge, class of 1913, president of the Artistic Weaving Co., New York.

Spartanburg Leads S. C. Counties in Cotton Production

SPARTANBURG, S. C.—Spartanburg county was the banner cotton county in production in the State last year, displacing Orangeburg county from the top place.

Ginning figures received here from the Department of Commerce show that this county last year was credited with 63,372 bales, while Anderson was second with 56,047 bales.

Vital Importance of Plant Engineer and His Department To Successful Mill Operation

Survey of His Jurisdiction and Responsibilities By the Plant Engineers' Club, Boston, Mass.

CONDITIONS in industrial plants are so varied that no rigid rules can be given to cover this subject, and only general principles will suffice. The principles given herein are general in their application and it is intended that they should be modified in individual cases in order to conform to local conditions.

General

The plant engineering department should have full charge of all activities whose successful or economical performance depends largely or entirely upon engineering. The engineering features of all activities should be referred to that department for advice, solution, or execution.

The plant engineering department should be directly responsible to the management.

The extent to which consulting, designing, and construction engineers should be engaged depends upon the character and size of the department under the supervision of the plant engineer. Wherever in these rules it is stated that this department should have jurisdiction over any activity, it means that the work shall be performed by that department or by contract engineers in direct contact with or under the direction of the plant engineering department.

Functions

Research
Development and Design
Construction
Operation
Maintenance, Repair and Replacement

Research—The plant engineering department should have jurisdiction over all research problems that are dependent primarily upon engineering science and in other problems over those portions which are similarly dependent.

Research work by the plant engineering department upon commodities, equipment, or processes that are common to several industries and where reliable data is available, is not warranted unless it concerns a special application that is peculiar to a particular industry.

In some industries the term "research" is applied to the investigation of raw materials for the purpose of determining their processing or utilization. This investigation often involves engineering but is somewhat routine in character and more of the nature of testing than of research. This work should be under control of a special department or the production department.

Development and Design—The plant engineering department should be responsible for all designs, plans, and specifications relating to real estate, structures, power, service, and manufacturing equipment. It should be responsible for or consulted upon engineering features, in so far as they affect the efficiency and cost of methods of manufacture and routing of materials.

Construction—The construction of buildings, structures, and equipment as well as all ground work should be under the jurisdiction of the plant engineering department.

Operation—The plant engineering department should have jurisdiction over all operation involved in the manufacture and delivery of heat, light, and power.

It should also be responsible for the management and control of all service departments and service equipment. *Note:* Service equipment constitutes such utilities as those required for ventilation, refrigeration, elevators, water systems, fire protection, safety engineering, and similar functions.

Maintenance, Repair, and Replacement—The jurisdiction of the plant engineering department should include the maintenance, repair and replacement of all real estate, buildings, power, service and manufacturing equipment.

Other Departments

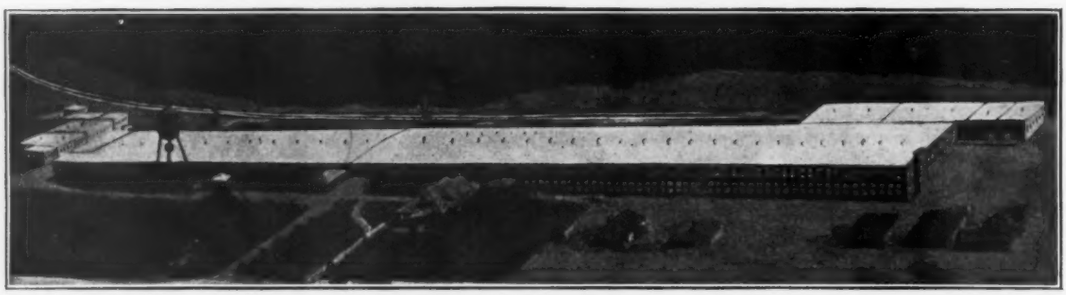
INTERCOURSE WITH OTHER DEPARTMENTS AND INTERESTS

Management

Part I Function Chart of Plant Engineers Department

Recommended by Plant Engineers Club, Tremont Temple, Boston, Mass., 1928
(Designed by Plant Engineers Club of Boston, Mass., 1927.

DIVISIONS	FUNCTIONS	FIELD COVERED	DETAILS
RESEARCH	MECHANICAL RESEARCH	NEW PRODUCTS AND PROCESSES IMPROVEMENT IN QUANTITY, QUALITY, AND ECONOMY IN THE MANUFACTURE OF PRODUCTS UTILIZATION OF WASTE	ENGINEERING LABORATORY ENGINEERING LIBRARY CONSULTATION INVESTIGATION DESIGN
	CHEMICAL RESEARCH	DETECTION AND PREVENTION OF INJURIOUS CHEMICAL REACTIONS ON PLANT EQUIPMENT MATERIALS WHICH WOULD TEND TO IMPAIR STRENGTH OR EFFICIENCY	RECORDS OF PERFORMANCE, AND COSTS
DEVELOPMENT AND DESIGN	SELECTION OF PLANT AND SITE	DETERMINATION OF BEARING CAPACITY OF SOIL DETERMINATION OF DRAINAGE CONDITION DETERMINATION OF SEWERAGE DISPOSAL TRANSPORTATION OF PRODUCTS, SUPPLIES AND EMPLOYEES PREPARATION OF SITE SUPPLYING OF HEAT, LIGHT AND POWER SUPPLYING OF WATER FOR PROCESS, POWER AND DRINKING SURVEYS	
	PLANT DEVELOPMENT	PLANNING OF BUILDINGS DESIGN OF STRUCTURES DEPARTMENT LAYOUTS DEVELOPMENT OF NEW PROCESSES DEVELOPMENT OF NEW MACHINERY PATENT PROTECTION	NUMBER, SIZE AND OCCUPANCY ROUTING OF MATERIALS
	SPECIFICATIONS	CONSULTATION WITH PRODUCTION HEADS CONSULTATION WITH PURCHASING DEPARTMENT GENERAL DESIGN POLICY COLLABORATION OF DATA INSURANCE REQUIREMENTS	
	DRAFTING	DRAWING ROOM OPERATIONS RECORDS AND FILES SAFETY PRACTICES ENGINEERING LIBRARY	BLUE PRINTING SIGN MAKING DRAWINGS DRAWINGS PATTERNS STOCK PARTS SALVAGE EQUIPMENT
	ESTIMATING	PREPARATION OF BUDGET	NEW WORK REPAIRS
	COST COMPARISONS	PROCESS MACHINERY PLANT FUTURE DEVELOPMENTS	
	INSPECTION	INSPECTION DURING CONSTRUCTION	CORRECTION OF DESIGN CHECKING CONSTRUCTION PLANS AND SPECIFICATIONS
	REPORTS	PROGRESS REPORTS FINAL REPORTS	PERFORMANCE TESTS RESULTS OF OPERATION
	IMPROVEMENT	UPKEEP OF PLANT AND EQUIPMENT	IMPROVEMENTS OF PLANT AND EQUIPMENT REPLACEMENT OF PLANT AND EQUIPMENT
CONSTRUCTION	CONTRACT CONSTRUCTION	PLANS AND SPECIFICATIONS SELECTION OF CONTRACTOR LOCAL INSPECTIONS CHECKING OF BILLS	
	PLANT CONSTRUCTION	PLANNING LABOR MATERIALS DEPARTMENTAL CHARGES	



Spinning Mill, Lincolnton, N. C.

Put These Mercerized Yarn Resources Behind You

KNITTERS like our facilities for serving them. Each year sees substantial additions to the roster of Boger & Crawford Mercerized Yarn customers. Our plant facilities have more than kept step. Witness the vast spinning mill at Lincolnton, N. C.—more than 1,000 ft. in length. Witness our mercerizing and processing equipment — thoroughly modern and capable of volume production at no sacrifice to quality.

Put these facilities to work on your next mercerized yarn order.

BOGER & CRAWFORD

"From the Cotton Field Direct to You"

J. and E. Venango Sts.
PHILADELPHIA, PA.

Production Department
Accounting Department
Purchasing Department
Insurance Department
Consulting Engineers
Contractors
Legal Department
Other Departments
Other Plants

General—The plant engineering department should make every possible effort to arrive at an amicable agreement with any other department or interest upon all subjects in dispute, and failing in that, should present the subject to the management for decision.

The management should be notified of any special agreements between departments or with outside interests.

It should be the obligation of the plant engineering department to meet the requirements of all departments in relation to heat, light, power, and service facilities.

Management

Management—1. The plant engineering department should be directly responsible to the management for all official statements made by the department and for all activities and conditions under its supervision.

2. The management should not be committed without its consent to the adoption or change of policies, activities or conditions by the plant engineering department.

3. The plant engineering department should report periodically to the management upon work accomplished, work in progress, status of conditions under its control, and work anticipated. Where desirable, these reports should include comment and recommendations.

4. The plant engineering department should base its operating maintenance, and repair expenditures upon a budget. It should present to the management an estimated budget and base its expenditures upon the budget as approved by the management.

5. In reporting on problems where there is more than one practical solution, the plant engineering department should present all phases and state its perference with reasons therefor.

6. The plant engineering department should, when considered necessary, prepare for the management an economic survey of process or equipment.

Production Department

Production Department—1. The plant engineering department should not assume the determination of quantity, quality, and time of production.

2. The plant engineering department should provide and maintain equipment for production, and be responsible for all problems relating to speeds of operation, temperature, voltage, pressures, and general efficiency of machinery.

3. The production department should be responsible for the operation of production equipment. The plant engineering department should be responsible for the performance of service equipment and should co-operate with production department in problems relating to handling of materials. All rules and regulations of the plant engineering department relating to safe and economical operation should be maintained.

***SOMETIMES** when business is poor, the plant engineering department or the mechanical department, as it is often called—is placed under fire and required to fight for its life. The textile departments protest the expense of the mechanical department (whereas, as a matter of fact, much of the expense incurred is due to deficiencies and lack of care in the textile departments). In the times of mill inactivity, however, the mechanical department finds an opportunity to put in some of its most effective work. It is then that idle equipment can be placed in first-class condition without interfering with production and the machines can be made ready to meet the demand efficiently when it returns. Thousands of dollars worth of valuable machinery, equipment, and properties are being allowed to deteriorate today because some mills have seen fit to neglect or cramp their mechanical departments.*

4. The responsibility for the maintenance of all production equipment except minor adjustments necessary for the operation of machines should be with the plant engineering department.

5. The plant engineering department should be responsible to the management for the safety of structures and safe operation of machinery.

6. The plant engineering department should have authority for supplying heat, light, and power as well as all service systems, within limits set by the management.

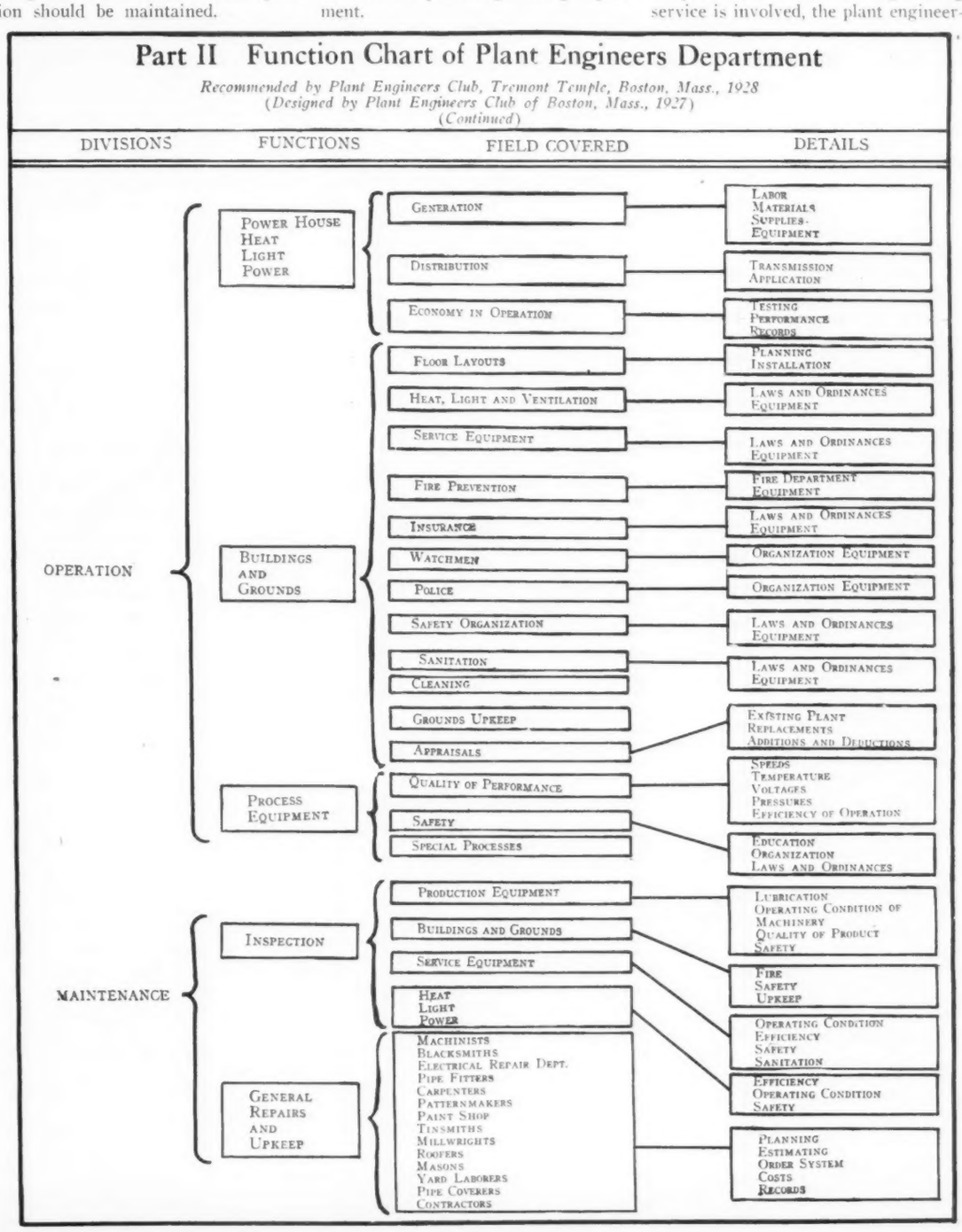
7. The plant engineering department should institute a system to facilitate the production department in securing prompt execution of orders.

8. The plant engineering department should co-operate with the production department in planning maintenance work so that it will interfere as little as possible with production.

9. In problems relating to research on product, in so far as engineering service is involved, the plant engineer-

Part II Function Chart of Plant Engineers Department

Recommended by Plant Engineers Club, Tremont Temple, Boston, Mass., 1928
(Designed by Plant Engineers Club of Boston, Mass., 1927)
(Continued)



ing department should cooperate with the production department.

10. The plant engineering department should furnish the production department with such engineering data as may be required.

Accounting Department

Accounting Department—1. The accounting department should, when possible, supply accounts based upon such classifications as the plant engineering department may require.

2. The plant engineering department should define the classification of any labor or materials used on any work performed under its supervision.

3. The plant engineering department should be consulted as to life of any building or equipment, so far as it concerns any phase of depreciation problems.

4. The plant engineering department should approve all charges for work done by its department before sending them to production or other departments.

5. The accounting department should provide detailed reports upon the cost of jobs when they are required by the plant engineering department.

6. The plant engineering department should initiate all records for materials and labor which are used in figuring costs of work done by its department.

7. The plant engineering department should advise whether charges are to be made against improvements, repairs, expenses, replacements.

8. The accounting department and the plant engineering department should co-operate in the preparation of figures for the distribution of expenses for heat, light, power, and service accounts.

9. The plant engineering department should accumulate such comparative data as may be necessary to show economic results from one period to another and also for comparison with other industries.

10. The plant engineering department should be permitted to check any charges made against accounts for which it is responsible.

11. Appraisals should be made in conjunction with the plant engineering department.

12. Records of changes in inventory values and depreciation of plant and equipment should be supplied to the accounting department by the plant engineering department.

Purchasing Department

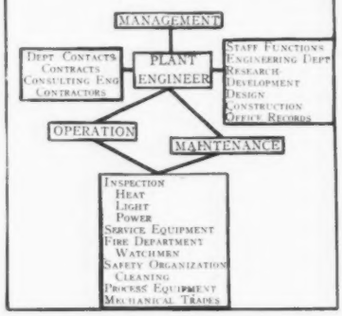
Purchasing Department—1. The plant engineering department should initate all requisitions for all supplies and equipment for which it is responsible.

2. The plant engineering department should draw all specifications for and approve all materials furnished upon its requisitions.

3. Major or specialized equipment should be selected by the plant engineering department, but co-operation with the purchasing department should exist in the handling of records and contracts.

4. The plant engineering department should be responsible for all mechanical stores whose supplies should

Chart I—The Relation of Principal Plant Engineering Departments
(One Central Plant)



be ordered through the purchasing department.

5. The purchasing department should co-operate with the plant engineering department in the exchange of information or catalogs on new developments or source of supply of materials or equipment.

6. The plant engineering department should co-operate with the purchasing department and suggest possible sources of supply of material and equipment and should be permitted to obtain prices and information when it may seem advisable. In case of abnormal conditions where price is secondary, the plant engineering department should have the authority to determine the purchase of materials and equipment.

7. The plant engineering department should check and report all goods received on its order for quantity and quality and should make such tests as are necessary and report to the purchasing department when requested as to the results obtained.

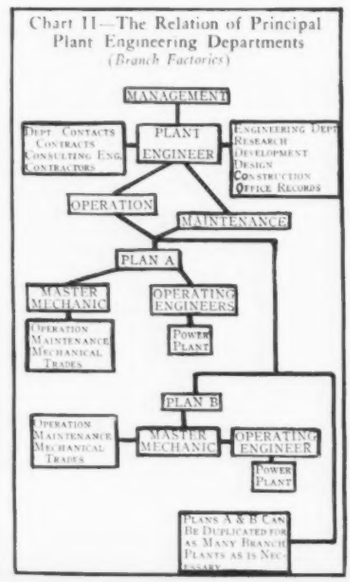
8. The plant engineering department should prepare contracts and receive bids on all construction, power purchases, or other allied service.

Insurance Department

Insurance Department—1. The plant engineering department should be responsible primarily for the reduction of hazards and secondarily for the reduction of rates for insurance.

2. The plant engineering department should have the privilege of dealing

Chart II—The Relation of Principal Plant Engineering Departments
(Branch Factories)



directly with the insurance companies on engineering problems, but should recognize the obligation to keep the insurance department informed regarding all such discussions.

3. The plant engineering department should pass upon recommendations made by insurance companies and be responsible for their enforcement.

4. The plant engineering department should co-operate with all insurance inspectors making inspections.

5. The plant engineering department should prepare for the executive in charge of insurance estimates of losses used in settling insurance claims, based upon figures submitted by the departments where losses occurred.

6. The plant engineering department should make periodic inspections of the plant to cover all departments of insurance.

7. The plant engineering department should be well informed on rules and regulations of insurance companies.

8. The plant engineering department should be provided with all schedules used in calculating insurance rates and make such recommendations as would reduce insurance premiums.

9. The plant engineering department should submit plans for alterations or new constructions to insurance companies for their approval.

10. The term "insurance" used in the above sections refers to all types, such as fire, accident, public liability, use and occupancy, boiler equipment, and electrical insurance.

11. The plant engineering department should assist in all problems on employes' liability insurance, in so far as related to inspection, engineering, and accident prevention.

Consulting Engineers

Consulting Engineers—1. The plant engineering department should be permitted, with the approval of the management, to call upon a consultant when additional professional advice is necessary.

2. All engineering data furnished to the consulting engineers should be provided by or approved by the plant engineering department.

3. The plant engineering department should be consulted upon the selection of the consulting engineer and act as the management's agent in relations with him.

4. The result of any investigation made by consultants should be submitted to the plant engineer for his comment or approval prior to definite action by the management.

Contractors

Contractors—1. The plant engineering department should prepare for the management and legal department all major contracts for engineering work, purchase of equipment, and the erection and maintenance of structures.

2. The plant engineering department should check and approve all plans, specifications and contracts before they are awarded.

3. The plant engineering department should have a sufficient knowledge of law to protect the owners' interest in all contracts either written or implied, and to interpret the responsibility of principal and agent; also, to interpret the performance of engineering work so far as it is regulated by contracts and specifications.

4. When designing and building machinery, the plant engineering department should make sure that the contract is made out in proper form, holding the company harmless against infringement of existing patents, and that the machinery is covered by proper insurance.

5. The plant engineering department should submit to the management for approval, a list of bidders with recommendations, for the award on all major contracts.

6. The plant engineering department should be responsible for the carrying out of all construction contracts according to plans and specifications.

7. The plant engineering department should see that owners' interest is protected to prevent any change, alteration, or additions being made to any contract, plans, or specifications except upon written authority of the management and upon the approval of the plant engineering department.

8. The plant engineering department should require all contractors to provide insurance which would protect the owners from any losses resulting from the performance of any contract.

9. The plant engineering department should be responsible for all guarantees and performance tests which may be required under the terms of the specifications or contracts.

10. The plant engineering department should check and approve all bills for contract work prior to settlement by management.

Legal Department

Legal Department—1. The plant engineering department should obtain the advice of the legal department on all special problems pertaining to law.

2. The plant engineering department should have a general knowledge of federal, state, and municipal laws and ordinances in connection with his work. Copies of the state laws on such questions as boiler inspection, elevator operations, toilet facilities, storage of inflammable materials, etc., should be kept in the file.

3. The department should have general knowledge of the relations between an agent and principal, as it is the agent of the company in many dealings, and is responsible to the management.

4. The plant engineering department should see that work of any unusual nature under its direction is covered by the Workmen's Compensation Act, or similar protection. The management should be informed of any hazardous work, and the department should make sure that employes under its supervision assume no unnecessary risks.

5. The plant engineering department is directly responsible for compliance with the many laws controlling manufacturing, such as maintaining proper entrances and exits, adequate wash-

ing facilities, good sanitary conditions, etc.

6. It shall assume the responsibility of making sure that all employes on building, power and maintenance work are properly licensed, including engineers, firemen, elevator operators, plumbers, etc.

7. The engineering work shall be carried on in such a way that the company will not incur any losses through damage suits or any claims due to criminal negligence.

8. The plant engineering department should be familiar with the responsibility of common carriers in moving, unloading, and the storage of materials and equipment, so far as it affects the shipping and receiving.

9. The plant engineering department should be well acquainted with easements, if any, connected with the property of the company, and with any rights of adjoining owners, harbor privileges, and water rights.

10. The plant engineering department should have a knowledge of the patent rights affecting machinery or materials purchased or built and which are included under its supervision.

Other Departments and Plants

Other Departments — 1. The plant engineering department should cooperate and carry out recommendations with the personnel department on all problems which may develop in relation to accident prevention, recreation, medical, and employment.

2. The relation with the other departments in the organization such as pay, transportation, credit and sales, advertising, shall embody all of those requirements as mentioned above, in so far as they are related to plant engineering.

Other Plants — 1. Members of the plant engineering department should, with the management's permission, keep in touch with other plant engineers. They should have the opportunity to visit other plants in order to become familiar with modern methods and engineering practice.

2. They should compile comparative data and measure such results with other companies as may be of material interest, in so far as it is considered agreeable to the management.

Providing Textile Mill Workers with Cool Drinking Water—Layout of Systems

Methods of Purifying Water—Amount Required—Plans for Arrangement of Piping and Capacities

By Charles L. Hubbard

THIS article gives practical information regarding methods of securing a supply of pure drinking water, the equipment necessary for maintaining a proper temperature, and systems of distribution in plants of varying size. If a drinking water system is designed along the general lines given, it should prove satisfactory under all ordinary conditions. The expense of installation and operation is not large considering the advantages to be obtained.

THINGS like fresh air, good light, a comfortable temperature, and pure cool drinking water, which add to the comfort and health of an employe, increase his output and reduce loss of time. Purity of water supply is of first importance, as illustrated by the experience of one large plant recently, where the production output was reduced nearly 75% for several weeks by an epidemic of typhoid fever caused by drinking contaminated water. Although the supply came from a deep well and was therefore supposed to be free from disease-producing bacteria, underground seepage caused it to become polluted, with the result noted. As to cost, another mill has been demonstrating for more than five years that a circulating system can be operated for less than one cent a day per employe.

In order to be palatable and quench thirst, water must be cool, but if its temperature approaches that of melting ice, it is unhealthful and may produce serious results if a considerable quantity is consumed at one time when a person is overheated. Another matter of considerable importance in a large plant, which is often overlooked, is the time lost by the operatives in going to and from drinking water tanks or faucets when too few are provided, and particularly where they are not properly located.

Source of Supply

If the water supply of the city or town in which the plant is located is of a standard of purity required for drinking purposes, and has the approval of the local or state board of health, then it is only necessary to draw from the city mains. When the plant has its own water system, a careful analysis should be made by an expert, and his advice followed as to what steps should be taken, if any, for its purification.

The most common water-borne disease in this country is typhoid fever, which is due to sewage pollution, and the bacteria are practically always present in lakes or rivers into which sewage is discharged. Even artesian wells several hundred feet deep are often contaminated by seepage into the underground streams which supply them.

Methods of Purification

If analysis shows the water to be free from harmful bacteria, while suspended matter causes discoloration and an unpleasant taste, filtration is called for. There are various filters on the market which are easily connected into the supply pipe of the system, one of the most effective making use of sand as the filtering medium. In using these, alum or some other coagulant is added to the water before it enters the filter. This unites with certain natural substances which the water contains, forming a feathery mass which not only removes the finest sediment but also a certain amount of bacteria as well. The sand then acts as a coarser filter for removing the coagulant.

The effectiveness of a filter of this general type depends largely upon how clean it is kept, for if the substances removed are allowed to remain for any length of time, the filter may act as an actual breeder of impurities rather than a purifier. They should, in general, be flushed out once a day by the manipulation of valves provided for this purpose. If harmful bacteria are present, then the water must be sterilized as well as filtered. The method most commonly employed for this purpose on a large scale is chlorination, which may also be used effectively for small installations, as in factories. This is done by treating the water either with a solution of hypochlorite of lime, or with free chlorine gas itself by means of practically automatic commercial apparatus which is on the market. In this process such minute quantities of free chlorine are introduced that no harmful results will come from drinking the water.

Another method makes use of ultraviolet rays, which are generated commercially by the mercury-vapor arc enclosed in a quartz tube. If clear water is exposed to these rays, any bacteria which it may contain are destroyed. A simple appliance for this purpose, ranging in sizes suitable for factory work, may be obtained which is automatic in its action and

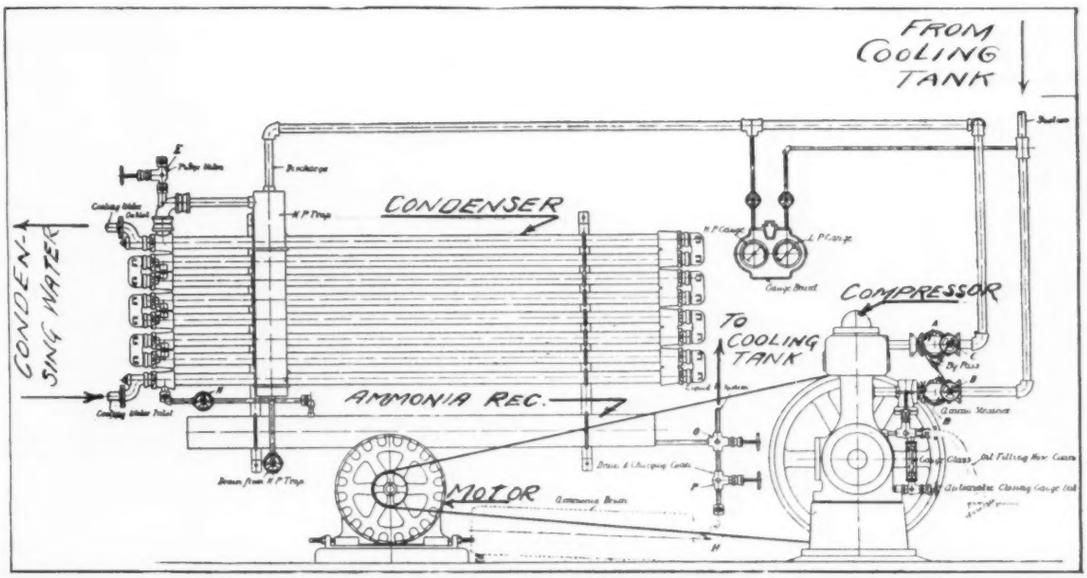
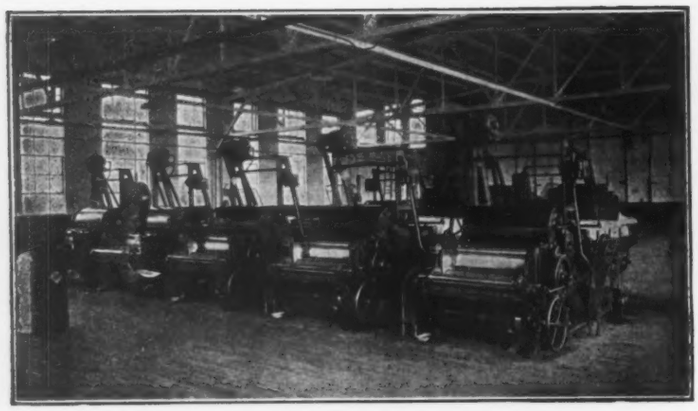


Fig. 1. Typical Refrigerating Machine for Water Cooling



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very effective in the removal of all disease-producing bacteria. It is necessary in any case for the water to be filtered before sterilizing, in order to remove any solids in suspension. The cost of sterilization by either method is about the same, and only amounts to a few cents per thousand gallons.

If, for any reason, the methods given for obtaining pure water are not practical in any given case, distillation may be resorted to. While effective in the destruction of bacteria, it removes all mineral salts and makes the water less palatable for drinking purposes. A distilling outfit takes the place of filters and sterilizing equipment, and may employ either exhaust or live steam in the process.

In plants using the entire exhaust for heating purposes in the winter, it is possible to utilize exhaust steam for distilling in the summer, and draw on the boilers for live steam only during the winter heating season. In some cases there is more exhaust than can be used for heating during certain hours of the day, particularly in mild weather, and this can be utilized for distillation.

When large quantities of water are required, it will be more economical to employ an evaporator than to use live steam from the boilers, as with this apparatus one pound of live steam will produce from four to six pounds of distilled water. When live steam is condensed directly for drinking water, it will require about 2.5 boiler horsepower per 100 people to be supplied under average conditions.

Amount of Temperature

The quantity of drinking water required per person varies considerably with the occupation. In textile mills equipped with bubble fountains or spring faucets and paper cups, it is customary to figure on about one gallon per day of eight hours, which includes the waste. Some engineers consider from two to three quarts sufficient, but it seems best to install equipment for the larger quantity, as this is nearer actual requirements during the summer, and the plant is usually automatically controlled to furnish only the quantity of cool water necessary.

The most satisfactory temperature for drinking water has been found to range from 45 to 50°, and it is customary to start the water from the cooler at the lower temperature and allow a five-degree rise in the distributing system. Water cooled by direct contact with ice is too cold for drinking purposes, while that which is much above 50° does not quench the thirst so readily. Natural ice should never be placed in the same chamber with the water, as it is cut from ponds and rivers where it is liable to be polluted from sewage of various kinds. Artificial ice made from distilled water is not open to the same objection, but on the other hand, may pick up objectionable germs in handling.

Methods of Cooling

The drinking water in plants of any considerable size, beyond the capacity of the ordinary type of cooler used in offices, etc., is best cooled by means of mechanical refrigeration. A plant of this kind is simple in construction, takes up little room, and is comparatively inexpensive to operate. A typical outfit of this kind, operated on the compression system, is shown in Fig. 1.

The compressor is of the vertical type operated by a belted motor, and both machines can be placed on a good concrete floor without special foundations. If in any case the floor does not seem heavy enough for this purpose, a block of concrete six or eight inches in thickness may be cast on top of it. The condenser is usually of the double-pipe construction, and may be hung on a convenient wall near the compressor. The cooling water for the condenser has no connection with the drinking water, and should not be confused with it in making the computations. The cooling tank usually comes as a part of the refrigerating outfit and contains the ammonia expansion coil, which is proportioned to the capacity of the machine.

The general construction of a cooler of this type is illustrated in Fig. 2. The inner tank is of galvanized steel, insulated with cork, and covered either with a jacket of galvanized steel or wooden sheathing. Water from the supply system is admitted automatically by means of a ball-cock located either in the cooler or in a separate float tank connected with the latter, as shown in Figs. 5 and 6. The outfit shown in Fig. 1 can be had in any size to meet various requirements, and shows the ammonia connections to and from the cooling tank, which may be located at any convenient point, as described later. A compact portable machine of a different type is shown in Fig. 3. This is built in sizes having capacities ranging from 20 to 200 gals. of water per hour, cooled from 70° to 50°.

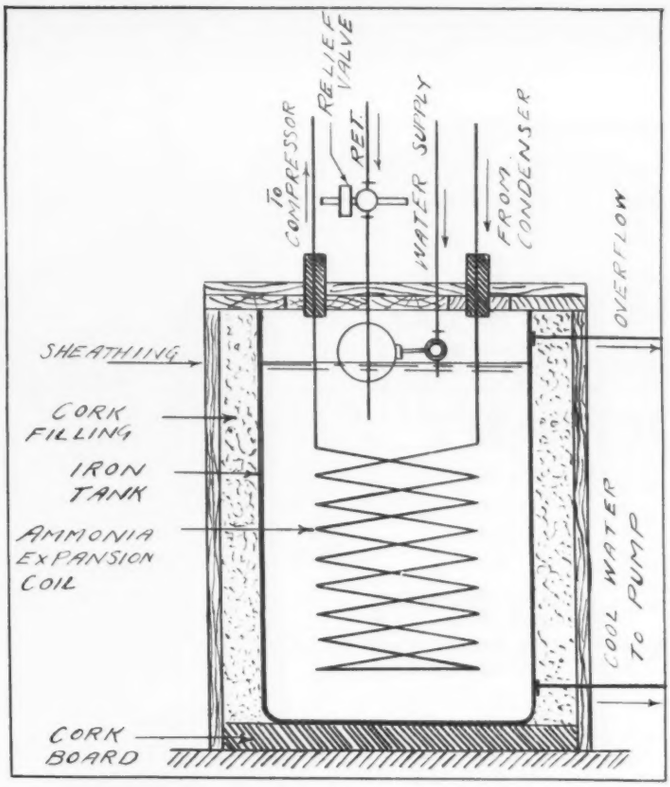

Fig. 2. Typical Water Cooler for Use with Mechanical Refrigeration

The refrigerating capacity of the machine may be computed as follows: Assuming the water to be drawn from the city mains at an average temperature of 70°, it must be cooled through $70 - 45 = 25°$, requiring $25 \times 8.3 = 207$ B.t.u. per gallon. One ton of refrigerating capacity represents the withdrawal of 12,000 B.t.u. per hour, so that $207 \div 12{,}000 = 0.0173$ of a ton of refrigerating capacity which is required for cooling each gallon of water consumed. This, however, is simply the refrigeration necessary for the initial cooling of the water, and does not take into account the withdrawal of the heat which is absorbed through the walls of the piping in its passage through the distributing system.

Keeping the water cool in the supply pipes often requires more refrigerating capacity than for cooling the water which is actually consumed. This varies with the amount of exposed pipe surface, the kind and thickness of the insulation employed, and the difference in temperature between the water in the pipes and the surrounding air. While the heat absorption may be computed quite accurately for any given set of conditions, it will be sufficiently close for all ordinary work to make use of the factors in Table 1 in connection with the length and size of the pipe runs provided with the usual type of covering:

TABLE I

Pipe Size	Factor
1 in.	6
1¼ in.	7
1½ in.	8
2 in.	9

The heat absorption for cooling the water and that required for maintaining the desired temperature in the distributing system are added, and the result increased 10% for the heat transmission through the machinery, etc. For example, a textile mill having 1,500 employes is to be provided with a drinking-water system composed of approximately 2,000 ft. of 1¼-in. and 3,000 ft. of 1-in. piping. What refrigerating capacity will be required?

Assuming each person uses 1 gal. of water per 8-hr. day, the total consumption will be $(1{,}500 \times 1) \div 8 =$

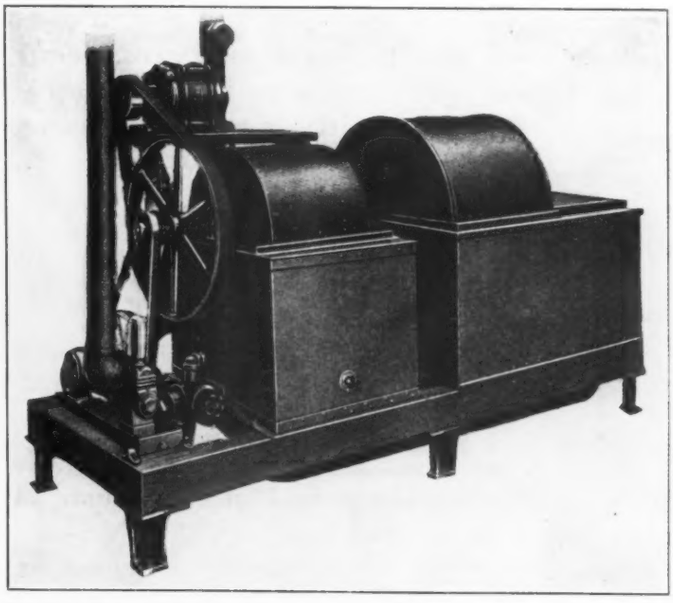

Fig. 3. A Compact Water-Cooling Outfit Adapted to Factory Requirements

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188 gals. per hour, and will require 188 x 0.0173 = 3.25 tons of refrigeration for cooling the water from 70 to 45°. The heat to be removed to prevent a rise in temperature of more than 5° in the system will be, according to Table I, (2,000 x 7) + (3,000 x 6) = 32,000 B.t.u. per hour, and will require 32,000 ÷ 12,000 = 2.67 tons of refrigerating capacity, or a total of (3.25 + 2.67) x 1.10 = 5.92, or practically 6 tons.

Piping Arrangement

There are three common systems of piping employed for distributing the water to the drinking fountains and keeping it cool. The simplest is that shown in Fig. 4, but it is only adapted to tall buildings of small ground area, or when the plant is divided into a number of sections of this form. In this case the cooling tank containing the ammonia coil is placed at the top of the building, well above the highest fixtures, and connected with the refrigerating machine, which would ordinarily be located in the basement. The cooler is vented to the atmosphere, and make-up water is supplied automatically from the city main by means of a ball-cock and float tank, as indicated in the illustration.

The supply drop from the bottom of the cooling tank and the cross pipes connected with the drinking fountains are covered, while the return riser or circulating pipe at the right is left uncovered. This creates a slight difference in temperature between the two vertical pipes which causes the water to circulate slowly in the manner indicated by the arrows, and so keeps the water cool at the fountains at all times. The force producing the circulation is very small, however, and is not sufficient to overcome the friction of the pipes unless the risers have considerable height and the horizontal runs are comparatively short.

A much better arrangement, which is positive in action and adapted to practically all buildings and all usual lengths of horizontal piping, is shown in Fig. 5. In this case the cooling tank may be placed in the basement beside the refrigerating machine, and the water is circulated through the system by means of a small pump, usually driven by an electric motor. The float or balance tank, connecting with the city main, supplies make-up water to the cooler, as indicated, and is placed at such a height as to give the desired pressure at the highest fixtures. The power consumed by the pump in this case is very small, being simply that required to overcome the friction in the piping. This arrangement is only adapted to cases where the city or supply pressure is sufficient to force the water up to the elevated tank.

In case the supply pressure is not sufficient to do this, the arrangement shown in Fig. 6 may be used, in which the cooler is vented to the atmosphere and supplied with make-up water from a flat tank at the same level, as indicated in the drawing. The cool water is pumped through the system as before, and the necessary pressure is

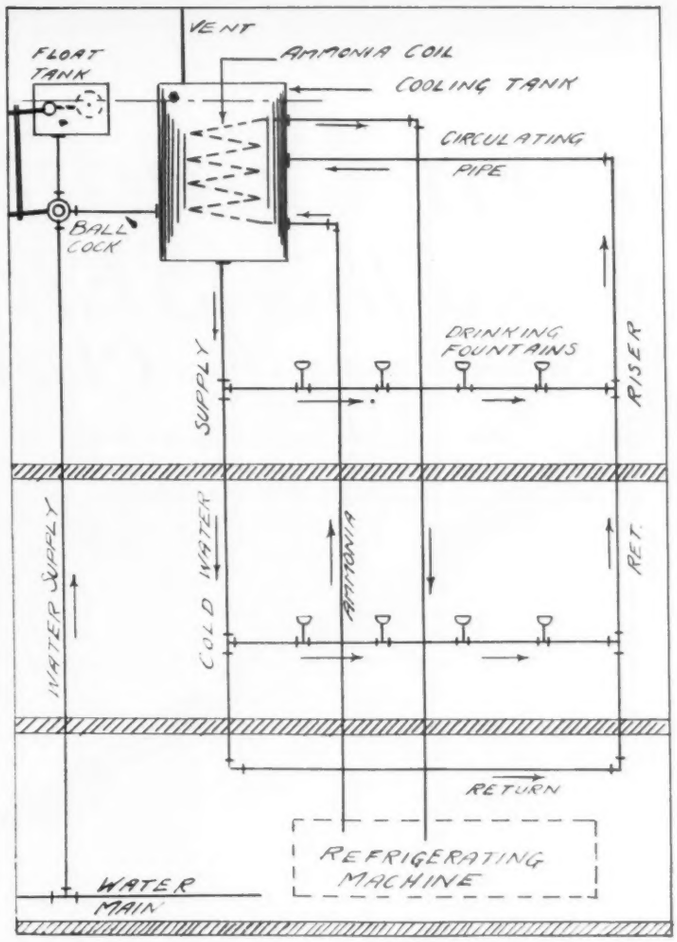

Fig. 4. Cooling System with Gravity Circulation

maintained by means of a relief valve in the return pipe just above the cooling tank. In this case the pump works against a pressure head sufficient to overcome the friction in the piping, and also to open the relief valve, the latter representing the "lift" to a point well above the highest fixture. The power to operate the pump is considerably more in this case, although not a large item in a plant of ordinary size.

Determining Pipe Sizes

Experience has shown that it is best to limit the velocity of flow in the distributing pipes to about 3 ft. per second, or 180 ft. per minute, which gives approximately the following capacities for pipes of different diameters.

TABLE II

Pipe Size	Gallons per minute
1 in.	8
1¼ in.	15
1½ in.	20
2 in.	30

The distributing circuits are commonly limited to 1-in., 1¼-in., and 1½-in. pipes by dividing them into sections starting from a central point, in the general manner indicated in Fig. 7, as in this way the length of run is also shortened, thus reducing the frictional resistance and the cost of pumping. In general, the lengths of run are limited to about 1,500 ft. for 1-in. pipe; 2,000 ft. for 1¼-in. pipe; and 3,000 ft. for 1½-in. pipe. With a velocity of approximately 180 ft. per minute, this will give friction heads of about 120, 130, and 150 ft., respectively.

Power for Pumping

The power for pumping depends upon the quantity of water to be handled, and whether it is simply moved against the frictional resistance of the piping, as in Fig. 5, or forced against the resistance of a relief valve, as in Fig. 6. The quantity of water to be moved to give sufficient circulation to limit the rise in the circuit to 5° has been determined approximately by experiment for different sizes of pipe and length of run, and found to be about as shown in Table III.

TABLE III

Size of Pipe	Length of Run	Gallons per Minute
1	1,500	4
1¼	2,000	7
1½	3,000	10

The maximum quantity to be

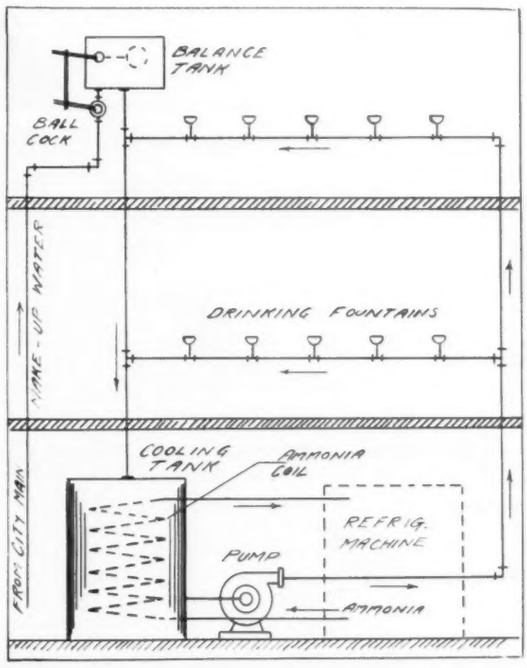

Fig. 5. System of Forced Circulation, Supplied from High-Pressure Mains

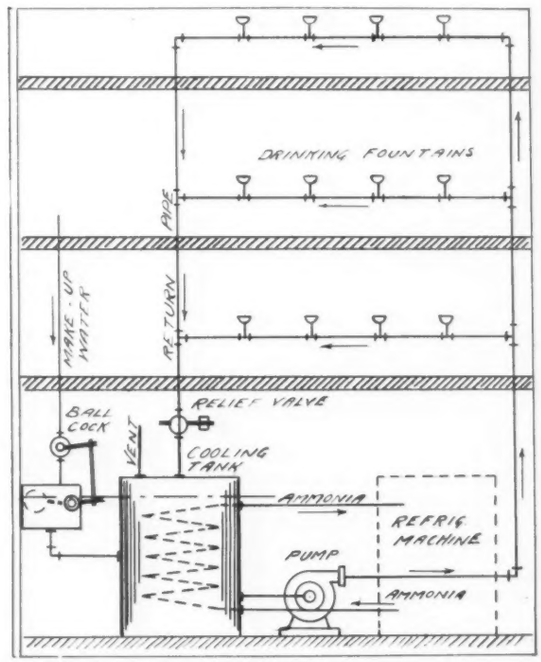

Fig. 6. Arrangement for a Supply from Low-Pressure Mains

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Formic Acid	Sodium Prussiate
Glauber's Salt	Sodium Sulphide
Naphthalene	Sodium Sulpho Cyanide
Oxalic Acid	Sodium Stannate
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handled by the pump will be that actually used for drinking, plus that required for circulation, as noted in Table III.

The power required for operating the pump is given by the formula:

$$\text{Hp.} = \frac{8.3 \times H \times G}{33{,}000 \times E}$$

in which

Hp. = horsepower required.

H = head pumped against, in feet, including frictional resistance, and the equivalent lift produced by the relief valve in Fig. 6.

G = gallons pumped per minute.

E = efficiency of the pump, which may be taken as 50% for the small size used.

Let us take the case of the plant shown in Fig. 7, and assume that 1,500 employes are to be provided for as in the previous example; that is, a total of 1,500 gals. are to be furnished per day, or 188 gals. per hour. Let us further assume that each of the three loops takes care of approximately the same number of people, and that the length of each run does not exceed 1,500 ft. Under these conditions the water consumed on each loop would be $188 \div (60 \times 3) =$ 1 gal. per minute, approximately.

From Table III we find that for a 1-in. pipe, 4 gals. of water must be circulated per minute to maintain the proper temperature, which makes a total of $4 + 1 = 5$ gals. to be handled by the pump. Referring to Table II, we find that a 1-in. pipe has a capacity of 8 gals., without exceeding practical operating conditions. It has also been stated that the frictional resistance to the flow of 8 gals. per minute through a 1-in. pipe, 1,500 ft. long, is equivalent to a 120-ft. head.

If the arrangement in the present case was like that shown in Fig. 5, the pump would simply operate against the friction in the pipe, which we will take as 120 ft., assuming the effect of a smaller quantity of water (5 gals.) to be offset by bends in the pipe. The total volume of water to be handled by the pump (three loops) is 15 gals. per minute, which will require

$$\frac{8.3 \times 120 \times 15}{33{,}000 \times 0.5} = 0.9 \text{ hp.}$$

or practically a 1-hp. motor.

If the arrangement was that shown in Fig. 6, and the relief valve in the return was set to maintain a pressure of 30 lbs. per square inch, or approximately 60-ft. head, then the total pressure to be pumped against would be $120 + 60 = 180$ ft., and $(8.3 \times 180 \times 15) \div (33{,}000 \times 0.5) = 1.4$ hp., which would be required.

It was previously found that a 7-ton machine was required for producing the necessary refrigeration. The power required for driving the compressor of a refrigerating machine depends upon the suction and discharge pressures, and also upon the size and type of machine. For the conditions of water cooling, it will be safe to assume 2 hp. per ton of refrigerating capacity, which in the above case would call for a $2 \times 7 = 14$ hp. motor. If the pump was driven from the same motor, $14 + 1.4 = 15.4$ hp. would be required, and a 15 hp. machine would do the work easily with the ample assumptions made throughout the problem.

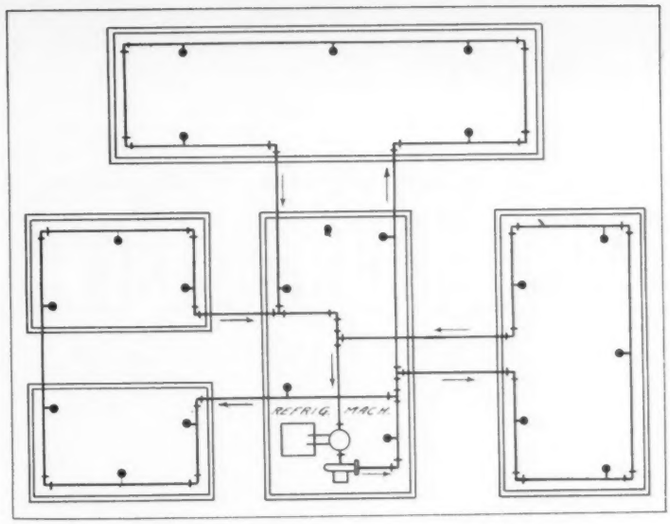

Fig. 7. General Method of Running the Distributing Circuits

Longer Runs of Piping

It is usually possible to divide the piping system into sections so that the length of the circuits for the different sizes of pipe will not exceed those given in Table III. If, in any particular case, the length of run for a given quantity of water exceeds that given in the table, the pipe line may be enlarged for a portion of its length to keep down the friction head. As the actual power requirements for pumping are comparatively small, any ordinary adjustment of sizes may usually be estimated with sufficient accuracy if a hydraulic "pipe table" is not at hand.

Suppose in the present case the length of the loops was 2,000 ft. instead of 1,500. We see from Table III that a 1¼-in. pipe will carry 15 gals. of water per minute without exceeding the practical limitations as to velocity and frictional resistance, and it would seem safe to assume that by using 500 ft. of 1¼-in. and 1500 ft. of 1-in. pipe, and circulating 8 gals. of water per minute to make up for the increased "warming" effect of the larger pipe, that all requirements would be met. While circuits up to 5,000 ft. in length are in successful use, it is better when possible not to exceed the limits previously given to any great extent.

Opening and Cleaning of Cotton

Hopper System Provides Most Logical and Efficient Treatment

By Thomas Hagan*

TWENTY-FIVE years ago, as a general thing, higher grades of cotton were used than are used today. The opening room was considered a place to open the bales and break them up somewhat before the cotton was sent to aging bins. The picker room was considered the place to clean cotton.

In the last few years, however, this situation has been changed. The desire for economy has caused the majority of mills to eliminate the aging bins. However, it has not been proven that it was real economy. Two-process picking has succeeded three-process picking, and the picker room is looked upon more as a lap-forming room than a cleaning room, while a greater part of the cleaning has been delegated to the opening room. With this proposition, we have found one idea following another so rapidly that the impression has been given that opening and picking have been subjected to one fad after another. Every few months, we find some new cleaning machine that is said to take out some additional waste, until we find today that there is no unity of opinion regarding what equipment should be used for opening and cleaning.

Opening Process Illogical

To narrow this discussion down, let us consider only a print-cloth mill. The same ideas will apply, to a greater or lesser extent, to mills manufacturing other products, with modifications for the character of the cotton used. Our opinion of the opening rooms that are found in the majority of mills is, in a nutshell, that they are illogical. The typical equipment that we find in opening rooms today is a bale breaker, or two breakers in tandem, followed by a Buckley or lattice section, and then by a vertical opener. I have not tried to apply the trade names of the different machines, as all the leading machine companies are building sections that answer to this description, and almost all are recommending a layout that is somewhat similar to this. Mills will lay out around such a unit from 4 to 20 bales of cotton, usually with a certain percentage of higher-grade bales, and the remaining bales of lower grades.

Our opinion of such an arrangement is frankly that it does not get anywhere nearly the maximum virtue out of the cotton. Our reasons are as follows:

Blending Inadequate

1. *Blending*

Such an arrangement does not blend the cotton. This may sound like a broad statement, but I believe that an examination of any such unit will substantiate what I have said. In the first place, a bale breaker will not hold the cotton from more than three bales at a time in the way that the cotton is fed into it at the average mill. We have stood back of a great many bale breakers, and we have found that one lump of cotton will be fed in at intervals varying from every minute to every three minutes. In other words, you put cotton in at the best from one bale every minute, followed by another bale in a minute, and followed by other bales at minute intervals; and, as I said, the bale breaker holds cotton from not more than three bales at a time. If the feed apron were 100 yds. long, and there were 100 bales around it, you would still be feeding one bale at a time and never blending more than three bales at any given period. Surely no one can claim that this is blending cotton properly.

The second bale breaker in tandem helps very slightly in that some of the cotton is continually coming in from the first, and blending with some of the cotton on the second breaker. At the same time, you are only feeding, under best conditions, cotton from one bale every minute. Therefore, I believe it is logical to say that a bale breaker or bale breakers in tandem do not blend cotton adequately.

Buckley a Cleaner

2. *Machine Succession*

Under the arrangements that we have outlined, the Buckley section follows the last bale breaker. A Buckley section is a cleaning machine. This is followed by a vertical opener. The vertical opener is fundamentally not a cleaning machine, but an opening machine, and we believe it is safe to say all machine builders will agree. In other words, this arrangement of machines attempts to clean cotton and open it afterwards. We believe that the cotton should be opened completely before the effort is made to clean it.

Again, a bale breaker and a vertical opener are, comparatively speaking, high-production units. A Buckley section is a low-production unit. To sandwich a low-production unit between two high-production units either lessens the work of the high-production units or crowds the low-production unit so that it will not do the work that it should do properly, because it is forced to do too much.

We believe that a Buckley beater,

* Manager, The Textile Development Co., Boston, Mass. Paper read at Providence meeting of National Association of Cotton Manufacturers, April 25.

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no matter what name you call it by, is a splendid beater. It is a rubbing beater, and not a striking beater. It should be run slowly, and does not injure fibers. We can say nothing against the Buckley beater, but we do believe very strongly that the place for the Buckley beater is in the picker room, and its place is not in the opening room.

3. *Mixing of Grades*

Under the system outlined, we feel that there is no perfect blending of cotton of different grades. A mill will say that they lay down a certain number of low-grade bales to a mix. From the statements that I have previously made, it will be seen that for some minutes, low-grade cotton is used, and for other minutes, high-grade cotton is used, as each time a piece is fed into the bale breaker, it is either a high- or low-grade bale, but not both. We therefore feel that the cotton has a more uneven appearance than is necessary.

4. *Cleaning*

Under the system outlined, the mill puts cotton of various grades through the same cleaning machines, expecting the machines to clean strict good ordinary cotton and middling cotton with equal effectiveness, and take out no more of the good stock from the high-grade cotton than it does from the low-grade cotton. This statement does not seem quite fair.

As I have previously stated, this arrangement of machines occurs more frequently than any other arrangement that we have seen. There are some times variations by the addition of one or more machines of different kinds to this line, but the idea of running the cotton through a given line is almost general. Practical results that we have seen in a large number of mills have proven that this system does not blend cotton well. Furthermore, it either takes too much cotton out of the high-grade or not enough dirt out of the low-grade.

Hopper System

5. *Hopper System*

We are very strongly in favor of the adoption of what we call a double hopper system. We find mills universally experimenting with mixes containing different grades and character of cotton, and we believe that the hopper system answers the objections before mentioned better than any other that we have seen.

The hopper system is very briefly as follows: I am giving an illustration of an eight-hopper system. This can be very logically increased to a much larger number, but I am giving eight as the smallest number that we believe should be applied to a print-cloth mill. Under this system, we would have three hoppers feeding in parallel on to an endless-belt conveyor. The cotton from there would go through a vertical opener, and one or more cleaners. I do not care at this time to discuss the relative virtues of different makes of cleaning machines. The cotton from the last cleaner is fed on to another endless-belt conveyor, on to which cotton from five other hoppers, also running in parallel, is dropped. The cotton then goes through another vertical opener, and one or more cleaning machines. The cotton used in the first three hoppers is the low-grade cotton. The cotton used in four out of the five last hoppers is the high-grade cotton. The fifth hopper in the second battery is used for reworked waste.

This system has the following advantages over the bale-breaker system, which I have previously discussed:

a. *Cleaning*

The low-grade cotton fed into the first three hoppers receives special cleaning, which it requires.

b. *Opening.*

As the settings on the hoppers are closed in as close as possible, the cotton is opened up much better than if it went through a large bale breaker with larger spikes on the apron. The cotton is also opened up with a vertical opener before it is cleaned.

c. *Blending.*

I made the statement that a bale breaker would contain cotton from about three bales. We will say that a hopper contains cotton from two bales, for the sake of the argument. Under this system, you are continually blending cotton from 16 bales at a time, instead of three bales. You are also blending at all times the high-grade cotton with the low-grade cotton and the waste, with constant proportions of each.

On account of the virtues of this system, some mills are successfully using cotton of much lower grades than is possible with the old system, because of the special cleaning and blending.

We believe that many first-class cleaning machines are constructed, but we would emphasize especially that cleaning machines should be chosen of the capacity required to fit the character of the cotton that the mill has selected to use. We have found very often that mills can either get a cleaner cloth with the cotton that is used, or get a cloth that is as clean as the present cloth with low grades when the opening room has been arranged in a logical way.

d. *Picker Room.*

The work of the picker room, under this system, then devolves itself into one of finishing the work of cleaning instead of doing it all, and of forming even and smooth laps. We feel that a picker room should not contain more than two processes of picking. In the last year or two, considerable excellent work has been done with one-process picking, and we believe that many mills are getting very satisfactory results. We ask that we be permitted not to discuss this question, as we are not sure that the final stage has been reached for all classes of work. We would lay as a standard, in the judgment of laps, a variation of not more than half an ounce per yard in the yard-to-yard measurement of laps. We would also state that it is reasonable to expect that the finisher picker laps have not more than 5 to 8 per cent of laps outside of the usual tolerence of ½ lb. either side of standard weight. The major function of the picker room then becomes that of forming a smooth even unit, whether it be in the opening or the picker room. The Buckley type of beater has been, and is being used with entire success all along the line. Buckley-opener beaters properly made do less injury to the cotton than any other known beater, and eliminate to a great extent the possibility of rupturing the fiber and stringing or curling the cotton. We consider it a far more valuable machine in the opening and cleaning of cotton after passing through a double hopper breaker than a Creighton; and I would never advise a Buckley and Creighton in tandem, because the Buckley is a horizontal cleaner and the Creighton is a vertical cleaner and is very liable to curl the cotton.

In the picker room we find the Buckley type of beater to be superior to any other type of 41″ and an 18″ in breaker picker and one 18″ Buckley in the finisher picker for all grades of cotton from 1⅛″ up and 18″ bladed beater in the finisher may be advisable for cotton below 1⅛″ staple. I feel sure when we get talking beaters someone is going to bring up the question of speeds and I suggest the following speeds: the 30″ Buckley at the opener 570 r. p. m.; at breaker picker 41″ Buckley, 475 to 500 r. p. m.; 18″ Buckley, 750 to 800 r. p. m.

Discussion by Robert W. Boys*

In opening up the discussion on Mr. Hagan's paper, I might say that many mill men here have been much interested in this subject, and I believe it has even found more interest of late than the question of long draft.

Mr. Hagan's paper has been very interesting and he has touched on some very vital points. He first refers to the blending of cotton and the eliminating of aging bins and has shown very clearly that to thoroughly blend cotton from a number of bales, aging bins are an absolute necessity unless equipped with a series of hoppers.

Buckley an Opener

Mr. Hagan has left a wide opening for discussion in the question of a Buckley opener not being an opening machine. In my experience I have found a Buckley both an opener and very much of a cleaner, and if these are arranged in tandem for low-grade cotton with by-pass arrangements for higher grades and a series of dust trunking after leaving the Buckleys an ideal standard opening method can be obtained.

Mr. Hagan does not mention the value of dust trunking in the opening and cleaning process and I consider this of the greatest importance in further cleaning and opening of cotton.

Mr. Hagan also states that a Buckley opener is a low-production unit. My experience is that a 30 inch Buckley will take care of a bale breaker producing from 50,000 to 60,000 lbs. per week of 48 hours.

It is slowly being recognized that the Buckley beater is playing a very important part in the opening and picking. It has played a very important part since the adoption of mechanical means of opening and cleaning. Up to the present time, I do not know of anything that is so efficient and valuable as this particular

* Farr-Alpaca Company, Holyoke, Mass.

Robert W. Boys, Who Discussed Mr. Hagan's Paper Before N. A. C. M. Convention

Moisture Content of Cotton

Easily Found at All Processes by Box with Recording Hygrometer

*By J. Frank Morrissey**

MOISTURE content in cotton is a subject that many of us have given little attention to, due no doubt to the fact that we have felt it took elaborate and expensive apparatus and specially trained operatives to get at the facts. It is the purpose of this paper to bring to the attention of some of the members who are not equipped with laboratories, that this important information may be gathered in their own plants in a very simple way, with inexpensive apparatus and by the ordinary labor in the rooms where you may choose to make your tests.

* Superintendent, Interlaken Mills, Harris, R. I. Paper read at Providence meeting of National Association of Cotton Manufacturers, April 25.

Adopted F. J. Hoxie's Method

I was led into this line of endeavor by a series of picker fires of unaccounted origin, and, on appealing to the Associated Factory Mutual Fire Insurance Companies, came in contact with Mr. F. J. Hoxie and his novel method of determining moisture content in cotton, a description of which was read before this Association in a

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paper given by Mr. Hoxie in 1916, entitled, "The Moisture Conditioning of Cotton with Relation to Picker Fires." The results obtained by these tests were not only interesting in the facts that they developed, but they opened up a new and simple method of making similar tests throughout the mill.

Our method of handling the cotton in our opener room prior to the tests was to take a sufficient number of bales for each day's run from the storehouse to the opener room, remove the hoops and sacking, and place the bales along one side of the feed apron. In this way the opened bales remain exposed to the dry air of the opener room a day and a night, and in some cases during the week-end would go over until Tuesday morning. This led to excessive drying during the months when steam was used for heating.

Contained Six Per Cent

Our first test was to obtain the moisture content of the cotton under these conditions, and the operator of the bale breaker would place a small sample from each bale in the box with the recording hygrometer. These samples were taken from the top, middle, and bottom of the bales as they were used, the curve as drawn by the hygrometer showing clearly the moisture content of the cotton as it was fed to the bale breaker. The tests showed that the cotton contained less than 6% moisture, which is considered dry, at least from an Underwriter's point of view, due to the fact that cotton in this condition is readily ignited by any substance that would cause a spark in any of the machines handling it at this point.

Tests were then made of the cotton in the bales in the storehouse, which showed a moisture content of about 8½%; this will vary somewhat according to season.

Changed Method

We then changed our method of handling the cotton at this point, bringing the bales into the opener room only as needed, and after removing the hoops and sacking, fed them directly to the bale breaker apron. Moisture tests made with this method of handling, with samples taken as before from the top, middle, and bottom of the bale as it was being used, showed the moisture content to be about 7¼%, only a slight loss from that in the bale in the storehouse. We are now continuing these tests to get a record of the moisture loss from the bale in the storehouse through the different picking processes to the finished lap, for, up to this point we make no attempt at artificial humidification in our plant. These tests are not completed to the point where I could include them in this paper, but as stated to you in the beginning, my real object in giving this talk is to bring out the possibilities of this method of making tests so that more mills can make them, thereby adding much useful information to this subject.

Invisible waste is one of the ghosts that stalk our paths, and tests of this kind will help lay the ghost, or at least show what part of our loss is water and whether it ever got as far as the picker room, or vanished in transit or in storage.

The moisture content of the cotton as it is received can be checked by the same method, by putting a percentage of the samples from the bales in the box with the recorder, or by putting the recorder in a closet with all the samples. Tests of this character can be made at night as well as during the day.

Other Uses of Test

Another useful way of using this equipment in the ordinary mill is to place the yarn bobbins from which you make your regular daily sizing in the box, and get the moisture content, which will often show you that the change in counts is moisture and not cotton content. This is especially true of mills which are not well equipped with humidifiers in the carding and spinning, or, if equipped, do not have automatic regulation. The above tests can be made with roving as well.

The slasher is another point in the mill where it will be an advantage to check up on the moisture content of the sized yarn. How many mills know how much of the so-called percentage of size is water? It is a simple matter to place a sample of yarn from each beam, or from every other beam, in the box with the hygrometer and get a picture of the moisture content of the yarn if there is any moisture left in it, or in case you are running it bone dry it will show that also. In many cases where the recorder will show a dry condition, the slasher can be run faster to the point where it will leave the desired amount of moisture in the yarn, about 6%, which can be determined by this apparatus.

Again in the cloth room, which in many cases is not humidified, you can take a few yards of cloth exposed to the weave room conditions and test it for moisture content, then expose it to the cloth room conditions, and make another test which will indicate whether you maintain the moisture content in this room or are losing at this point. There are innumerable uses to which this type of apparatus can be put, and, as I mentioned before, it will give you as good a record at night as during the day.

As for the equipment itself, you can build the box as simple or as elaborate as you wish, line it with tin if you care to—but in any case have it well made and not too heavy to handle easily. It should be as tight as possible, and the wood well filled and painted or varnished to keep out moisture. Use any type of recording hygrometer and test it frequently with a sling psychrometer for accuracy; keep it corrected at regular intervals.

The apparatus described is not a precise instrument, nor will it give you the accurate results that can be obtained in a well-equipped laboratory, but it will give you valuable information that can be gathered with the least amount of trouble and without extra labor.

Moisture in Cotton

Results of a Test and Suggestions for Buying Cotton

*By William Watson**

RECOGNIZING that cotton was being received with excessive moisture and that this water was being paid for at the price of cotton, the following work was undertaken to determine how much excess moisture the cotton contained as received, and how effectively this was eliminated in the picking process and slotted bins. Recognizing that much cotton was coming in abundantly wet, a series of experiments was undertaken to determine the amount of moisture in the Peeler cotton as received and the amount of this moisture which was lost in the normal picking process. Samples were taken from the bales and from the lattice bins to which the cotton was blown from the openers and then after each finishing and picking process. A bale of Peeler cotton containing 8% of moisture or 8½% regain was placed in the heated opener room and a recording hygrometer was attached to it with outside air at a temperature of about 60% on the average and a relative humidity of 60%. This bale was left in the opener room two weeks. At first the hygrometer indicated 65% relative humidity, which signified that the cotton contained 8% of moisture.

Moisture Lost in Picking

Moisture in cotton has today become a very important feature in most textile mills. The bale contains more moisture than it should; that is, from 8 to 12% regain. This is taken care of after being opened and blown to the picker room into the large bins, where the regain is from 8 to 10%. In the handling process the cotton gives up a considerable part of its moisture, about 5% regain. The doubling into intermediate and finisher pickers coupled with the automatic evener device gives a relatively even weight ready for carding, the regain being from 6 to 9% in the finished laps.

Cotton when thoroughly aired with dry air has a regain as low as 4% in the finished picker laps, when no form of humidity is used.

The following measurements show the loss of moisture through the picker room:

Cotton from bale:
- Time in oven—49 minutes
- Temperature of oven—220° F.
- Weight before drying—437.5 grms.
- Weight after drying—401 grms.
- Percentage moisture content—8.34%
- Regain—9.1%

Cotton from bin room:
- Time in oven—32.5 minutes
- Temperature of oven—220° F.
- Weight before drying—437.5 grms.
- Weight after drying—399.5 grms.
- Percentage of moisture—8.68%
- Regain—9.52%

Finished picker laps:
- Time in oven—30 minutes
- Temperature of oven—220° F.
- Weight before drying—437.5 grms.
- Weight after drying—398 grms.
- Percentage of moisture—9.03%
- Regain—9.9%
- Relative humidity—70%.

Loss in Lying Idle

We made several tests for moisture content of cotton in bales, taking a few samples from different bales. The average moisture content was 7½%. Some bales ran as high as 15%. Tests run in the morning and at different times during the day showed a difference of 1.1%. There were no heat or coils of any kind in the room. The average moisture content ran about 8% under normal conditions.

Results of Tests:	Regain	
7.30 A. M.	11 %	put in sample
8.30 A. M.	11.25%	
9.30 A. M.	10.5%	put in sample
10.30 A. M.	10.5%	
11.30 A. M.	10.75%	
12.30 P. M.	10.5%	
1.30 P. M.	10.4%	
2.30 P. M.	10.3%	put in sample
3.30 P. M.	10.5%	
4.30 P. M.	10.6%	
5.30 P. M.	10.4%	
6.30 P. M.	10.3%	
7.30 P. M.	10.2%	
8.30 P. M.	10.1%	
9.30 P. M.	10.0%	
10.30 P. M.	9.9%	
12.30 A. M.	9.9%	
1.30 A. M.	9.8%	
2.30 A. M.	9.8%	
3.30 A. M.	9.8%	
4.30 A. M.	9.8%	

These results show that immediately after putting sample cottons into the box the regain rose about three per cent for a period of two hours, then it went back to normal, running along quite consistently until the box was opened to put in more samples. The last samples put in were at 2:30 p. m. Regain went up to 10.6% at 4.30 p. m. and came back to normal within two hours. At 6.00 p. m. regain was about 10.3% and went down continually until at 5.00 a. m. it read 9.75%.

The loss of moisture by the regular picking process is practically nothing. There is little or no loss in the bins which is the place for a large loss in a fire. If it is desirable to dry the cotton, it is much more conveniently done in the bale, that is, putting in a warm room which is well ventilated.

Conclusion:
- Per cent moisture in cotton 7½ to 15%
- Per cent moisture in the bin room 8.68%
- Per cent moisture in the finished picker lap 9.03%.

Suggestions for buying cotton:

A moisture regain content should be universally adopted about 8½% as is standard in England. All actual cotton weights should be determined by moisture content. Buying should be on a net-weight basis, deducting for moisture or making allowance for less than standard, also penalizing for more moisture than the standard, similar to methods in use now with silk and wool.

* Cotton Technologist, Warwick Mills, Centreville, R. I. Paper read at Providence meeting of National Association of Cotton Manufacturers, April 25.

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Anti-Friction Spinning Spindle*

Description of Roller Bearing Spindle—Results of Mill Tests

By R. H. DeMott

IT would appear that the textile industry was one of the first to realize the advantages of the anti-friction bearing, for it is found that some forty years ago attempts were made to apply anti-friction bearings to spinning spindles. Although many attempts have been made since then to produce the so-called anti-friction bearing spindle, few of these attempts have been successful until recent years. The main reason for the failure to develop a satisfactory anti-friction bearing spindle was doubtless due to the difficult situation which exists in the spinning spindle on account of the high speed and limited space in which to mount the bearing.

Many of the early constructions were based upon the use of ball bearings, located at the neck of the spindle, in some cases at both the neck and step positions. Designs were made and spindles produced with a single row of balls at the neck, these balls riding either on the cylindrical blade or in a groove ground in the blade. The groove in the blade, although tending to increase the bearing capacity, weakened the spindle blade and this caused early failures. This construction was improved by the use of three to four rows of balls at the neck position, riding directly on the cylindrical blade but, although this type of spindle showed variable power saving, the life of the spindle was short and consequently did not present an attractive proposition for the mill owner.

Recognizing the disadvantages presented by the early types of anti-friction spindles SKF conducted a systematic and scientific study of this spindle problem, backed up by laboratory and mill tests, resulting in the production of the present SKF spindle. This spindle was first put on the market in Germany six and a half years ago and, although at first it was difficult to convince the mill owners that the length of life would correspond to that of the plain bearing spindle, mill installations and further laboratory tests demonstrated the durability of this type of anti-friction spindle.

Construction of Spindle

The SKF roller bearing spindle is a flexible Rabbeth spindle which, in its outer appearance, corresponds to the usual plain bearing spindle. The cast-iron bolster of the plain bearing spindle has been replaced by a steel one in which the upper, or roller bearing, and the bottom, or step plain bearing, are rigidly mounted. The bolster is therefore a complete unit and is mounted in the base of the spindle with a certain amount of radial play which permits the blade and bobbin to find its own axis of rotation.

The cylindrical rollers of the precision roller bearing at the neck are guided between parallel flanges of the outer race, which race is made of a high grade chrome steel, hardened throughout and ground. The cylindrical rollers are spaced and held in place by a one-piece retainer of solid bronze, this retainer being designed in such a way that the rollers are held in place when the blade is removed from the base and bolster. The inner race of the bearing is the blade itself which, at the bearing position, is of cylindrical shape, hardened and ground. The line contact of the rollers with the outer race and spindle blade provides for a maximum capacity within a limited space and also has a beneficial influence in that it represses the mounting movement of the spindle from the start of the operation, and consequently the so-called leaping or mounting of the spindle blade is reduced to a minimum.

The lower or step bearing, which is rigidly held in the lower part of the bolster sleeve, is a glass hardened chrome steel cup with an included angle of 80° and spherical seat. The bottom or point of the blade is also glass hardened with an included angle of 60° and small ball point. The upper part of the step bearing has an angle of 2° 45″, whereas the blade at the corresponding location has an angle of 2° 30″. This step bearing is provided with oil holes and groove for the proper circulation of oil.

In principle the blade and whorl assembly is the same as for the plain bearing spindle, that part of the blade above the whorl being the same in both cases.

The base of the SKF spindle, although the same in principle, is somewhat simpler than that of the plain bearing spindle for the base does not extend up into the whorl and there need be no oil snout. The external dimensions of the base may be practically the same although in some cases, in order to provide for a proper lubrication chamber, the outside diameter of the base may be slightly larger than the base of the plain bearing spindle. The complete SKF spindle unit consists of the same three principal parts as the plain bearing spindle; namely, the spindle blade and whorl assembly, the bolster and the base. In both SKF and plain bearing spindles the units are handled in practically the same way.

Advantages Indicated

As previously pointed out, the SKF roller bearing bolster and spindle was not developed in a short time but is the result of years of experience and test, and the results of actual mill installations indicate quite definitely the following advantages:

(1) *Power Saving*
- (a) 25 to 35% average comparing machine to machine.
- (b) Smaller driving motor and line-shafting.
- (c) Reducing of the turning moment of the cylinder, tightener pulley and gear-end.
- (d) The number of spindles can be increased without increasing the power consumption.

(2) *Starting Load Practically Eliminated*
- (a) No peaks in power diagram.
- (b) Easy starting of machines after a long stop.
- (c) Motors can be chosen for the average consumption without taking care of the peak load.
- (d) Better efficiency on the motors.

(3) *Considerable Saving in Lubrication*
- (a) Only one lubrication instead of 12 to 30 every 3500 hrs.

R. H. DeMott, Who Addressed the Wednesday Afternoon Session of N. A. C. M. Convention

- (b) Saving of oil and time.
- (c) No shut-downs for lubrication.

(4) *Cleanliness*
- (a) No soiled yarn, tapes, or frames.
- (b) No waste of time for cleaning.
- (c) Clean hands for operators.

(5) *Higher Quality of Yarn*
- (a) More uniform twist due to speed.

(6) *Increased Production*
- (a) Higher average speed due to lower starting load.
- (b) Less band breakage due to light running spindles.
- (c) More pounds of yarn per kw. hour.

(7) *Dependable*
- (a) No hot running spindles.
- (b) No vibrations.
- (c) Long life.

Although the greatest experience with the SKF spindle during the past six and one-half years has been in foreign countries, in which there are now running some one-half to three-quarter million spindles, we have had certain experiences in the United States during the last year and a half which indicates quite definitely that corresponding advantages can be obtained in the American mills.

Power Saving Shown

In one of the New England mills one frame of 272 plain bearing spindles, running 9422 r.p.m., spinning No. 29 to No. 36 yarn, with a front roll speed of 119, was tested for three weeks and it was found that the average horsepower was 7.38. Following this test 272 SKF spindles replaced the plain bearing spindles, similar power tests were conducted for a period of three weeks, and it was found that the average power was 5.10 or a saving of 30.9%.

In one of the southern mills in which they had installed SKF self-aligning ball bearings on the cylinders of their spinning frames, and later installed 225 SKF roller bearing spindles on one of these frames, it was found that, where formerly they needed a 2½-in. belt to drive the frame, the same frame, when equipped with the SKF spindles could be driven with a 1-in. belt.

One of the prominent southern consulting engineers recently made some comparative tests to determine the relative power consumed by the plain bearing and SKF roller bearing spindle and, based upon the spindle friction alone, it was found that the SKF spindle saved 40% over the plain bearing spindles.

One of the southern mills installed 252 spindles on one of their spinning frames, also 240 spindles on a light twister frame, each of these frames having previously been driven by a 7½ hp. motor. After the installation of the SKF spindles it was found that these frames could be started and driven satisfactorily without apparent overload with a 5 hp. motor.

Lubrication

Contrary to the plain bearing spindle the SKF roller bearing equipped spindle does not produce a continuous oil circulation through the entire bolster. In the plain bearing spindle the oil is pumped up between the spindle blade and bolster and then falls back into the oil reservoir outside the bolster. In the plain bearing spindle there must be a constant oil film between the rotating blade and the stationary bolster in order to separate what would normally be two rubbing surfaces. The roller bearing of the SKF spindle only requires a small amount of lubrication, primarily to protect the polished surfaces of the rollers and races and also to reduce the small amount of friction between rollers and retainer. It is therefore only necessary to fill the base of the spindle until approximately three-quarters of the unsupported length of the bolster is submerged in oil. This will provide for a constant bath of oil on the step bearing, and the roller bearing will be lubricated by oil drawn up the spindle blade by capillary attraction. The surplus oil which has reached the roller will flow down the inside of the bolster sleeve.

Some of the first spindles installed in this country in one of the New

(*Continued on page* 163)

* From paper presented April 25 at meeting of the National Association of Cotton Manufacturers.

Will 1950 See Your Present Roof Intact?

1950 seems ***ages*** away—yet many a mill roof built of Wolmanized Roof Planking in this year of 1928 will be entering its twenty-second year of service in 1950.

Which is better—to build a roof of ordinary untreated lumber to last seven or eight years under the high humidity conditions prevalent in textile mills—or to invest in Wolmanized Roof Planking which has three times the life of ordinary lumber?

Here is the most obvious economy. Consider the replacement cost of a mill roof—the tearing down, the hindrance to production. Yes, Wolmanized Roof Planking is more in ***first cost.*** So is the quality yarn you buy, the efficient processing machinery you go in for.

Wolmanized Roof Planking, in addition to its long life, retains all the desirable characteristics of the wood. It may be painted, stained or varnished. The preservative used, the highly toxic Wolman Salts, does not exude. You do not need to be told that here is roof planking highly suitable for mill requirements.

Clear 1950 with a roof ***insured*** with Wolmanized Roof Planking. Write for our booklet—"Reducing Maintenance Costs."

American Wolmanized Lumber Company
7 So. Front St., Elizabeth, N. J.

WOLMANIZED LUMBER DOES NOT DECAY

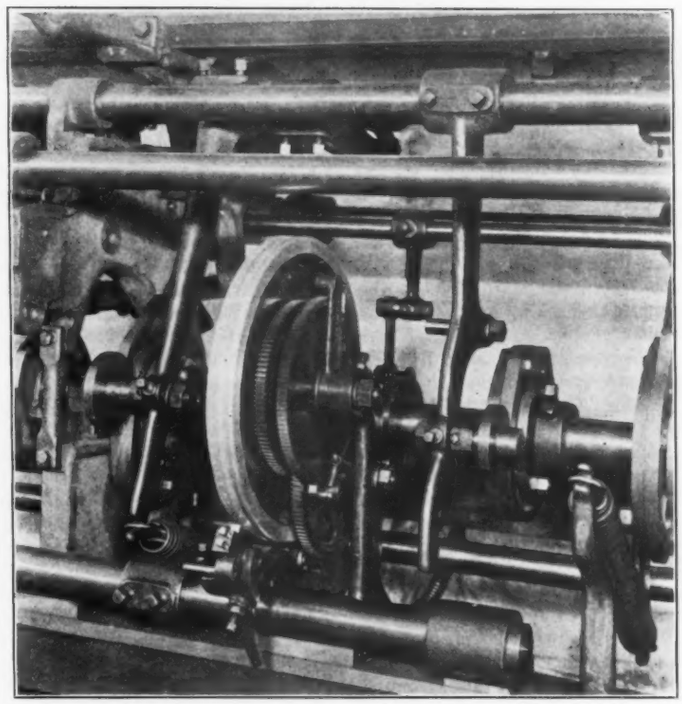
NEW MACHINERY & PROCESSES

Knitting-Course Counter

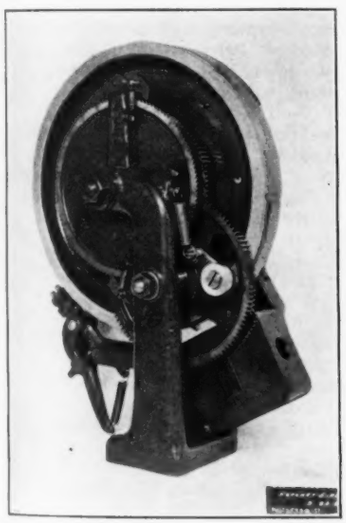
For Full-Fashioned Knitting and Other Machines

An electrically controlled, entirely automatic course counter designed especially for full-fashioned knitting machines but adaptable to any other type of knitting machine, or indeed to any other machine that is required to stop after a predetermined number of revolutions, has been developed by the Textile Machine Works, Reading, Pa., manufacturers of the Reading full-fashioned knitting machine. The counter automatically returns to zero after it has completed a series of stops limited only by the number of stopping buttons employed. A large, easily-read dial with simple stopping buttons allows rapid setting and resetting. The complete device is claimed to be easily installed, fool-proof, and accurate, and to require no attention.

An aluminum disk *A* mounted on a suitable bracket has graduated upon the face of its periphery a number of equal divisions. Each one of these divisions represents five courses of the



New Course Counter Installed on Knitting Machine



View Showing Ratchet and Gearing Side of New Course Counter

machine. A lever and a set of correctly ratioed gears transmit motion from the revolving cam shaft to disk *A* in such a way that each revolution of the shaft, regardless of the direction, turns the disk a corresponding part of its circumference.

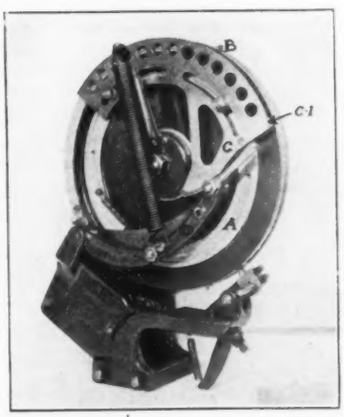
Disk *A* is provided with a V-shaped groove into which fit stop buttons *B*. These buttons may be easily adjusted and fastened at any desired line of the graduation. They will cause the machine to stop after it has made the exact number of courses for which these buttons are set. It is necessary to have one of these buttons permanently at the zero line.

The setting for the final stop at the completion of the stocking is done by the adjustable cam piece *C*. This cam piece is provided at one end with a marking line *C*-1, which should be set in such a way as to correspond with the graduation line desired for the final stop. An ingenious, strong, and simple device pushes disk *A* to the zero button at the proper moment, and this button causes the final stop in the usual way. The machine is then ready for the next set.

The stopping is done electrically by the momentary interruption of the current. This is only possible for machines which are equipped with remote control. For machines not so equipped, a mechanical stopping device can be furnished. It is recommended, however, that rather than use the latter, the machine be changed to remote electrical control. The cost of this additional electrical equipment is comparatively low, while the advantages are many and the use of this equipment is a decided improvement on the machine.

If it becomes necessary to reset disk *A* for any reason, the handle of lever *D* must be pressed down. This releases the springs and the disk may easily be revolved.

To obtain the best performance of the course counter, the machines on which these counters are to be installed should be provided with back stop motions.



View of New Course Counter Showing Adjustable Cam Piece

Cinder-Removing Stack

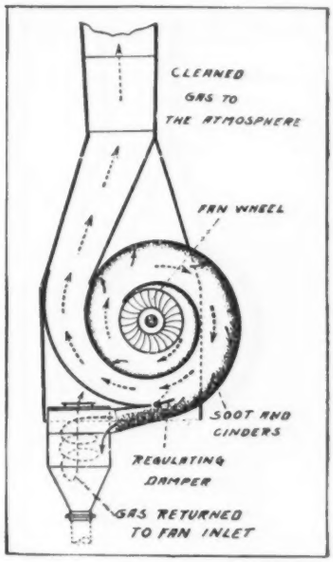
Induced-Draft Fan Removes Cinders, Dust, and Fly-Ash

A cinder-removing induced-draft fan built with or without the stack as a unit has been developed by the Prat-Daniel Corp., 101 Park Ave., New York. It is known as Type 4 Cinder-Removing Fan, and may be applied to existing stacks or chimneys. When applied to the Prat-Daniel Thermix Stack, the unit is known as Thermix Stack Type 4. It is recommended for removing cinders, dust, and fly-ash from the flue gas of stoker and pulverized-coal fired furnaces.

An understanding of the complete system can be obtained from a study of the accompanying diagram without much supplementary explanation. The dust is concentrated by means of a prolonged involute of the fan. Between 5 and 15% of the dust-laden gas is continuously withdrawn. The dust is precipitated in a cyclone, and the cleaned gas is returned from the cyclone to the suction side of the fan.

It is claimed that actual operating tests among the thirty installations in operation have shown over 93% elimination for dust from 50 to 100 mesh, over 85% elimination for dust from 150 to 200 mesh, and over 75% elimination for dust from 250 to 300 mesh. The power consumed due to the cinder remover is small and depends upon the quantity of gas withdrawn. This amount may be definitely regulated by the damper shown. The apparatus accommodates itself automatically to the speed of the fan at all boiler ratings. The additional space required is confined to the bulge on the side of a standard Thermix Stack, which in itself requires small space.

The degree of elimination may be accurately controlled by the regulating damper shown, which determines (a) section of gas stream withdrawn, i. e., fineness of material; and (b) amount of gas withdrawn, i. e., degree of elimination. When closed, the fan operates as ordinary induced draft without dust elimination. By closing the damper no resistance is caused in the circuit by the cinder remover when the fan is stopped and stack is operating on natural draft.



Cinder-Removing Induced-Draft Fan

Adjustable Swift

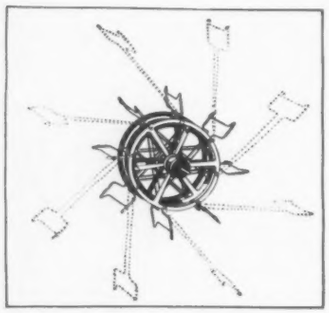
Regulates Tension in Winding Silk and Rayon

The accompanying illustration represents the Ruegg winding swift for silk and rayon developed a short time go by a Swiss manufacturer and recently introduced to this country by S. V. S. Muzzy, 384 Fifteenth Ave.,

New Machinery and Processes—Continued

Paterson, N. J. It automatically regulates the tension on the yarn in winding and is claimed to maintain uniformity in the appearance of yarn particularly, thereby eliminating stretch marks in the finished fabric.

The swift is all metal, and has eight arms that may be adjusted to different sizes of skeins. It is claimed to be particularly adaptable to the winding of fine denier raw silk and sticky silk, dyed or undyed. The swift is adjusted by turning the outside pair of



Ruegg Adjustable Automatic Swift

discs at the hub, and the range of circumferences is approximately from 36 in. to 80 in. The minimum diameter is 12.5 in. The swift is light in weight and accurately balanced.

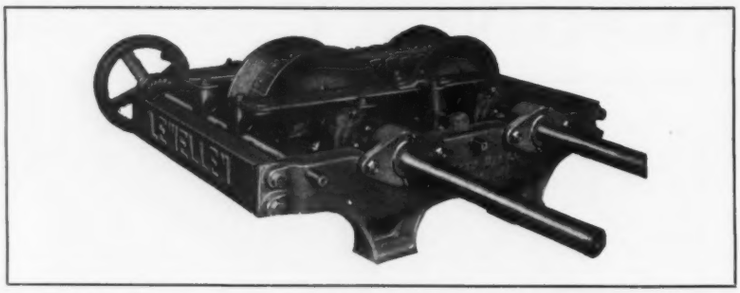
Variable Transmission

Improvements in Design and Construction

The Lewellen Manufacturing Co., Columbus, Ind., announces the development of a new Lewellen transmission equipped with Timken tapered-roller bearings throughout. The shaft bearings as well as the thrust bearings are the well-known Timken tapered-roller bearings. The mountings for these bearings are designed to completely enclose each bearing. This new transmission has been developed for use where there are unusual conditions and requirements, or where factory engineers prefer the Timken tapered-roller bearing.

The Lewellen transmission can now be furnished in the complete ball-bearing design and the complete Timken tapered-roller-bearing design, or it can be furnished in any combination—that is, with ring oiling shaft bearings; adapter-type ball-bearing shaft bearings; sleeve-type ball-bearing shaft bearings; or the Timken tapered-roller-bearing shaft bearings; and with any of these shaft bearings, either the complete ball-bearing thrust bearing or the Timken tapered-roller thrust bearing. This wide variety of bearing equipment is designed to meet every condition which requires variable-speed control. All these transmissions mentioned above are equipped with either the mechanical or electrical remote control, either manually operated or completely automatic.

Another recent improvement in the Lewellen transmission is a new belt with an "unbreakable" splice block.



Variable-Speed Transmission Which Has Recently Been Improved in Design and Construction

This new belt has the usual belt body with the leather-tipped wood blocks attached, the improvement being in the splice block. The top plate of the splice block interlocks with steel bars on the two ends of the belt, forming a splice stronger than any other part of the belt. The Lewellen Manufacturing Co. has been furnishing both the single- and double-block belts for more than nine years, and this new splice block is applied to both types of belts. With the design illustrated, the transmission is narrower, and it can be installed in places where the space available is limited.

Another important improvement in the transmission is the method of lubricating the discs and shafts. The Alemite high-pressure oiling system is now used on the discs, the oil grooves and channels being so designed that with one application the lubricant comes in contact with every part of the disc and shaft surfaces. This insures absolutely free movement of the discs on the shafts. It not only reduces the load on the bearings but decreases the effort required to change the transmission from one speed to another.

The transmission is also equipped with a number of types of shifting devices including the well-known speed indicator, which is applied either direct to the transmission frame or to the bearing carrying the shifting crank. The indicator is located directly at the operator's position, and hence can be easily seen.

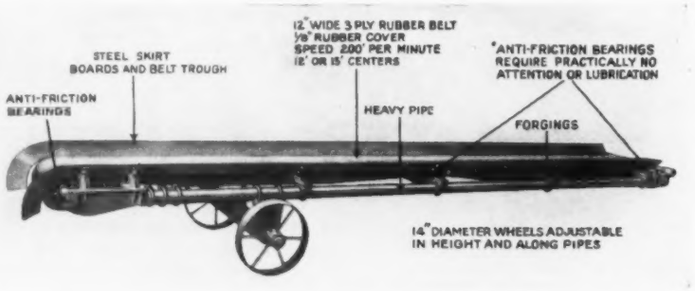
Portable Conveyor

Light Enough for One Man to Move—Rugged Construction

A rugged portable conveyor, to be known as the "Jax" conveyor, has been placed on the market by the Link-Belt Co., W. Pershing Road, Chicago, Ill. It is built light enough for one man to move easily and quickly, and it is suitable for unloading packages, bags, bales, coal, etc., both indoors and out. The conveyor is mounted on agricultural-type wheels of 14-in. diameter and 2-in. face. A 12-ft. conveyor complete with motor weighs but 640 lbs., and a 15-ft. conveyor with motor weighs 710 lbs.

The wheels are movable to practically any point along the entire frame, which consists of two heavy pipes tied together at the head and foot ends by electric steel castings. A pipe handle at the foot end facilitates ease of handling. The casting at the head end provides a base for the motor and a grease-tight enclosed housing in which the cut reduction gears operate. All shafts are provided with anti-friction bearings.

The height of the discharge point of the conveyor can be adjusted by moving the wheels forward or backward along the conveyor frame. The wheels are also provided with three positions for vertical adjustment. Lubrication is seldom necessary as all bearings are of the anti-friction type, and all gears run in a bath of grease.


12" WIDE 3 PLY RUBBER BELT
1/16" RUBBER COVER
SPEED 200' PER MINUTE
12' OR 15' CENTERS
STEEL SKIRT BOARDS AND BELT TROUGH
ANTI-FRICTION BEARINGS
HEAVY PIPE
*ANTI-FRICTION BEARINGS REQUIRE PRACTICALLY NO ATTENTION OR LUBRICATION
FORGINGS
14" DIAMETER WHEELS ADJUSTABLE IN HEIGHT AND ALONG PIPES

New Portable Conveyor for Use Indoors or Out

RECENT TEXTILE PATENTS

COMBING and like machines, Waste-collecting device for. 1,666,379. W. Hartley, Bolton, England. Assigned to Dobson & Barlow, Ltd., Bolton, England.

DOUBLING machines, Slub catcher and tension for. 1,666,565. F. E. Harding, Lawrence, Mass. Assigned to the Arlington Mills, Lawrence, Mass.

ELASTIC fabric, Woven. 1,666,325. L. B. Chisholm, Melrose, Mass. Assigned to Everlastik, Inc., Chelsea, Mass.

FABRIC. 1,666,686. L. B. Chisholm, Melrose, Mass. Assigned to Everlastik, Inc., Chelsea, Mass.

KNITTED fabric and making same, Warp. 1,666,638. E. J. Bennett, Stittville, N. Y. Assigned to H. R. Tobey.

KNITTING, Apparatus for and method of. 1,666,794. R. W. Scott, Babylon, and A. E. Page, Brooklyn, N. Y. Assigned to Scott & Williams, Inc., New York.

KNITTING machines, Vertical striper for wide-circular-rib. 1,666,784. W. Larkin, Norristown, Pa. Assigned to Fidelity Machine Co., Wilmington, Del.

LOOMS, Clutch mechanism for. 1,666,717. J. Northrop, Hopedale, Mass. Assigned to Draper Corp., Hopedale, Mass.

LOOMS, Let-off for terry. 1,666,872. H. A. Davis, Hopedale, Mass. Assigned to Draper Corp., Hopedale.

LOOMS, Shuttle-checking mechanism for. 1,666,620. G. E. Geoghegan, Lawrence, Mass.

LOOMS, Shuttle controlling mechanism for tension. 1,666,443. C. H. Draper, Hopedale, Mass. Assigned to Draper Corp., Hopedale, Mass.

PICKER-stick check. 1,666,822. A. Hingle, Atlanta, Ga.

PLATING attachment. 1,666,123. J. J. Egan and Eugene Gregor, Northampton, Mass. Assigned to McCallum Hosiery Co., Northampton, Mass.

SHUTTLE. 1,666,540. L. Pavia, Allentown, Pa.

SPINNING-ring traveler. 1,666,714. C. F. Merrill, Hopedale, Mass. Assigned to Draper Corp., Hopedale.

SCARF, Knit. 1,666,819. A. F. Goetz, Newark, N. J. Assigned to Morgan Knitting Mills, Inc., Newark, N. J.

SILK, Process for the after-treatment of freshly spun artificial. 1,666,090. F. J. Gahlert, Dresden-Loschwitz, Germany.

SILK, Treating. 1,666,501. J. C. Mackey, Paterson, N. J., and J. S. Kaufman, New York. Assigned one-third to Van Rensselaer Lansingh, Pelham, N. Y.

STOCKING on forms, Device for holding. 1,666,840. E. J. Ziock, Rockford, Ill.

TEXTILE apparatus. 1,666,735. H. D. Colman, Rockford, Ill. Assigned to Barber-Colman Co., Rockford, Ill.

THREAD cutter, Shuttle-feeler, 1,666,442. C. H. Draper, Hopedale, Mass. Assigned to Draper Corp., Hopedale.

WARP tension and let-off. 1,666,835. J. J. Ruhren, Guttenburg, N. J. Assigned to H. S. Vipond and W. B. Leitch, Montreal, Canada.

YARNS and fabrics with wool-like effects, Vegetable. 1,666,083. A. Bodmer, Watwil, Switzerland. Assigned to Heberlein Patent Corp., New York.

YARNS or the like, Mechanism for and method of handling. 1,666,650. E. F. Hathaway, Wellesley, and W. Bixby, Rochester, Mass. Assigned to Shawmut Engineering Co., Dorchester, Mass.

SILK filaments by drawing, Producing artificial. 1,655,453. K. Grunert, Turin, Italy.

SILK, Production of artificial. 1,665,958. W. H. Glover, Leamington, and C. F. Topham, Coventry, England. Assigned to Courtaulds, Ltd., London, England.

SLUB catcher or yarn cleaner. 1,665,287. E. R. Swanson, Cranston, R. I. Assigned to Universal Winding Co., Boston, Mass.

SPINNING and twisting frames, Device relating to ring. 1,665,422. R. Setzer, Munich, Germany.

SPINNING, doubling, and like machines, Doffing mechanism for cap. 1,665,720. A. and J. Stell and H. Welch, Keighley, England.

SPOOL carrier for plaiting, knotwork, bobbin, and lace-making machines. 1,665,783. A. Hombrecher, Barmen, Germany.

QUESTIONS AND ANSWERS

Service on Mill Problems and Correspondence With Readers

Use of Oleine in Finishing Rayon and Cotton Woven Goods

Technical Editor:

Can you give me information regarding the use of oleine or oleic acid in connection with finishing rayon and cotton woven goods? (6442)

Unfortunately the terms olein or oleine and oleic acid are used in the textile industry to denote several different substances or products. Oleic acid, for example, is known variously as red oil, wool oil, and oleine; and entirely different products such as sulphonated castor oil and sulphonated olive oil are also known as oleine. In answering the inquiry as to the use of oleine or oleic acid in connection with the finishing of rayon or cotton woven goods it is necessary, therefore, to define exactly what is meant by the terms employed.

Strictly speaking, oleine is glyceryl oleate, and is found as such in many animal and vegetable fats and oils. It is, in fact, the principal constituent of olive oil and several other liquid oils. Loosely, oleine may be considered to be the liquid part of any fat as distinguished from stearine, the solid portion. Oleine is liquid at ordinary temperatures, but solid at temperatures below O° C.

Commercial oleic acid is a by-product in the manufacture of stearic or palmitic acid from tallow or palm oil. Several methods are in use for the separation of the fatty acid from the glycerine. The most important processes are the autoclave method, yielding what is sometimes called saponified oleine; the distillation method, giving the so-called distilled oleine; and Twitchell's process. According to the fat or oil used, the fatty acids obtained by any of these processes will vary in composition; e.g., tallow will yield a mixture of oleic acid, palmitic acid, and stearic acid. The liquid and solid portions are separated; the former, consisting chiefly of oleic acid (about 85 to 95%) is known commercially as oleic acid, red oil, wool oil, cloth oil, etc. This commercial oleic acid is used largely in the woolen industry.

Another important use is in the manufacture of textile soaps, and some authorities are of the opinion that soaps made from oleic acid or from an olive oil containing a high percentage of oleic acid are the best adapted for textile use. Within recent years mineral oil emulsions have found favor in the finishing industry, and it has been found that oleic acid is useful in the manufacture of these emulsions.

Sulphonated oils, or Turkey-red oil, such as sulphonated olive oil or sulphonated castor oil, are sometimes designated as oleines. These sulphonated oils when used as finishing materials tend to give a soft or pliable feel to the fabric. They may be used alone, or in conjunction with starch or dextrine to counteract the harshness or stiffness of these latter agents. The amount used will vary widely depending upon the weight and construction of the fabric and the particular finish required. Turkey-red oil prepared from castor oil is also used in the scouring, boiling, and dyeing of cotton and rayon fabrics. The high emulsifying power and penetrating properties of Turkey-red oil make it valuable as a detergent, and in dyeing its colloidal property tends to give even and level shades. This product is also used by dyers to assist in dissolving dyestuffs, and in the case of certain dyes which are not soluble in water it must be employed. Sulphonated oils are usually marketed on the basis of total fatty matter, as 50 or 75% oils. Cottonseed oil and corn oil may be sulphonated, but the results obtained with these products are not considered to be equal to those obtained with sulphonated castor oil.

To avoid any misunderstanding in the purchase or use of oleine or oleic acid, it is suggested that the following nomenclature be observed:

(1) Oleic Acid or Red Oil, used in wool scouring and in the manufacture of textile soaps and mineral oil emulsions.

(2) Sulphonated Olive Oil, employed in finishing cotton, rayon, and silk fabrics. Total fat content to be specified.

(3) Sulphonated Castor Oil, used in scouring, dyeing, and finishing of cotton, rayon, and silk fabrics. Total fat content to be specified.

* * *

All-Over Pattern Effect on Worsted-Knit Fabric

Technical Editor:

We are enclosing a sample of fabric and would appreciate it very much if you could give us some information as to how it is made, on what machine, and the yarn you think it is made of. (6441)

The sample of fabric knit goods submitted is made on a circular spring-needle machine equipped with tuck pressers. The yarns alternate on successive feeds, brown and white. In the finishing of this material there is likely to be considerable shrinkage, and it is possible to give merely an estimate on this sample on that account. We think it was probably made on a machine with about 10 needles to the inch. We have raveled yarns from the sample and feel that the original counts were about 10s worsted. The brown seemed slightly heavier but this may be the result of dyeing. The pattern effect is obtained by having disc pressers notched in the proper way. Where the presser is notched, the needle is not pressed and that yarn is taken on a tuck stitch which is cast off at the next feed. In this way the color is thrown to the back.

* * *

Distribution of Overhead in Underwear Mill

Technical Editor:

We would like to know what are the prevalent practices of distributing indirect labor and overhead in the underwear industry. This inquiry pertains to the finishing departments of an underwear mill only, and has no bearing on the piece-goods manufacture. Are the indirect items—such as light, heat, power, rent, repairs, indirect labor, etc.—distributed properly as a percentage of direct piece-work labor, or a per cent of raw material, or total accumulated costs, or what methods are proper? (6439)

The overhead items are properly distributed as a percentage of direct piece-work labor. This is the universal practice.

* * *

Finishing Holland Cloth

Technical Editor:

We will appreciate it if you will tell us the composition of the coating employed in making holland cloth, such as is used in protecting the face of raw rubber sheets. Samples of the cloth are being sent. (6444)

We have examined the two samples of holland cloth and are returning portions of the swatches which for identification we have marked Nos. 1 and 2. Upon testing with iodine solution, both samples gave indications of being heavily starched; and upon burning portions of the fabric, sample No. 2 was found to contain mineral filler. In order to obtain an estimate of the amount of finishing materials in the cloth, weighed portions of each sample were desized, washed, dried, and reweighed; and in the case of Sample No. 1 another portion was weighed, ignited, and the ash content determined.

The results of the analysis calculated on the basis of air-dry unfinished cloth are as follows:

Sample No. 1

Total finishing material (mainly starch) 73%

Sample No. 2

Total finishing material..... 83%
Mineral filler (probably China clay) 7%
Starch (by difference)..... 76%

From the appearance and feel of the samples, it seems probable that a small amount of glue or gelatine was used in conjunction with the starch in the finishing of these fabrics. It was also noted that the two swatches were of different construction; Sample No. 1 is apparently a 64 x 60, and Sample No. 2 is of considerably coarser weave.

* * *

Effect of Copping on Twist of Crepe Yarns

Technical Editor:

We have noted a difference of approximately one to two per cent between the same weight of crepe filling, i. e., there was approximately one to two per cent gain on right twist over left twist. We are greatly interested in solving this.

Quite a number of years back, when the vertical coppers were in use, it was always necessary to have both a right-hand and a left-hand copping machine, due to the fact that if one copped right-hand filling on the opposite machine it would open up the twist, and vice versa. Under the modern method of copping, one would think that this would be eliminated, but it is not.

We are under the impression that, due to the fact that we run both right and left over the same hand copping machine, this shrinkage takes place in the shuttle, due to the fact that both the right- and left-hand filling are released from the cop in the same manner, which we are under the impression gives a slight twist to the one hand filling and allows the same amount of twist to be released in the other hand filling. We would kindly request you to give us your opinion on this diagnosis. (6440)

It is a fact that occasionally one twist will run ahead of the other over an extended period, but our experience has shown us that we do not find this loss to be consistently 1 to 2%. We have sometimes found that the right will run a little over and at other times the left. The shortage does not always occur on the same twist.

It is a fact that crepe yarn in right twist and left twist, which is copped in the same direction, will have a tendency to increase or diminish in

TEXTILE WORLD:

I am in receipt of your favor of the 20th inst.

Thank you very much for your information and also for your promptness and courtesy.

Yours truly,

(Signed) JOHN F. DAVIDSON,
Orianna Bleach Works.

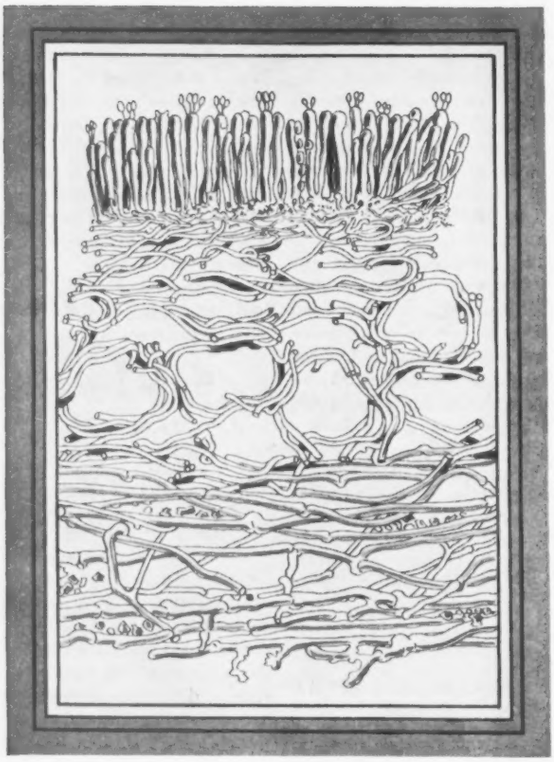
In this department, we undertake to answer, free of charge, to the best of our ability, questions pertaining to textile matters received from any regular subscriber to TEXTILE WORLD. Inquiries should give the fullest information and data possible. In the case of damage to material, a sample should be sent. In this way answers can be given which will be of immediate technical value to the correspondent and to others in the same line. Inquiries pertaining to textile processes, machinery improvements, methods of management, the markets, etc., are especially invited as well as any legitimate discussion on the views expressed. All inquiries must be accompanied by the name of the person inquiring, not for publication, but as an evidence of good faith. The identity of those seeking information on technical subjects will not be disclosed.

If the question is not of general interest to textile readers and involves expensive investigation, a charge covering the cost may be made, of which the inquirer will be advised before any expense is incurred.

Letters expressing opinions or voicing criticism will be signed by the correspondent's name unless the letter itself contains a request that the name be withheld.

For prompt service, technical inquiries should be sent directly to the Technical Editor, TEXTILE WORLD, 65 Franklin St., Boston, Mass.

What does it cost to feed the Fungi?



Thin section of encrusting fruit body of Merulins Lachrymans, the "dry rot" fungus, showing palisade layer of basidia bearing spores. Fruiting bodies are an expression of fungous activity within the wood. They form only after decay has well started. They appear at the surface in the form of imbricate shelves or brackets, leathery or waxy incrustations.

YEAR after year dry rot exacts its tribute from the cotton mill industry—a toll that runs into millions of dollars. Sub-flooring rots and is replaced. Timbers fail and new ones are installed,—all because the fungi which causes dry rot is permitted to exist.

The growth of this destructive plant life takes place only where conditions are favorable. Warm, moist air aids the parasites—such humidity must be present where cotton is worked and it can't be changed. The growth of the plant life depends on a source of food—untreated timber.

Here is where the attacks of the fungi may be halted. Creo-Pine, strong Southern Pine, sub-flooring and timbers, deeply impregnated with creosote are poison to the fungi. Fungi spores falling on this protected wood, cannot germinate or mature. Decay is prevented. The sub-floors remain sturdy and staunch. Consequently, Creo-pine Sub-floors and timbers actually outlive the factories in which they are placed.

So perfect is this protection that cotton mill owners and architects now generally specify Creo-pine for all cotton mill sub-floors and timbers—and at low cost armorplate the mill against decay.

Creo-pine
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SOUTHERN WOOD PRESERVING CO.
ATLANTA, GA.

Treating Plants EAST POINT, GA., *and* CHATTANOOGA, TENN.

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See also CONSOLIDATED TEXTILE CATALOG

twist to a very slight degree, according to the way the yarn is drawn off the cop, either with or against the twist. Experience has shown us that this amounts to about three-quarters of a turn per inch, which is in our opinion a negligible item.

As the yarn is drawn over the end of the cop in weaving, one twist will increase about three-quarters of a turn, while the other will decrease three-quarters of a turn. This result can be very easily checked by doubling two ends of raw silk and running them on a cop without any twist whatever. The yarn can then be drawn off the cop for perhaps 500 measured inches. The twist is then slid down until you have it in about 10 in. for test purposes. Our tests have shown that 500 in. doubled without any twist whatever, and drawn off a cop, will show 325 to 425 turns for the entire 500 in., depending on the diameter of the cop.

We are under the impression that the variation in poundage is not due to the above, but comes from either an uneven dividing of the original raw stock or a variation of waste in the two twists. One other point may have a very slight influence and that is a question of tension in weaving. One twist will have a tendency to cling to the cop, which will cause a very slightly tighter tension, while the other twist will have a tendency to jump away from the cop, which will cause a slightly lighter tension. Many crepes under careful examination show one twist to lie tighter than the other.

This of course applies only to instances where both twists are copped in the same direction. We do not know of any instance where manufacturers are copping fine silk crepe yarns in both right and left directions, and we consider it unnecessary, though it may improve the goods slightly by so doing. It will insure in our opinion a slightly more even tension.

* * *

Use of Gut String

Technical Editor:

Can you tell me what use textile mills make of gut string? I have heard that it was used on jacquards and in the manufacture of narrow fabrics. (6423)

Gut string has been used in the textile industry on plush looms. The gut is attached to the plush knife cutter and draws the cutter across the loom when it separates the pile in the weaving operation. We do not know of any instances where gut string is used in the jacquard. It is not in general use in the manufacture of narrow fabrics. We know of one case where it was used to replace old string heddles, and another case where it supplanted steel-edged wires. Just why it was substituted for the metal we do not now recall. Its cost would be high and for jacquards its susceptibility to change in temperature would cause difficulties.

Pepperell Mfg. Co., Biddeford, Me. Directors of this company are said to have notified the mayor of Biddeford that unless the taxes of the corporation are reduced, the company will look elsewhere for a location.

Anti-Friction Bearing Spindle

(*Continued from page* 155)

England mills have now run 8,100 hrs. without the necessity of replenishing the lubricant. It is, however, recommended that the lubricant be changed after 3500 running hours, and that the entire base and bolster be cleansed after 10,000 hrs. of service. In the mills where complete frames have been equipped it is apparent that the oil leakage is considerably less because the bands are cleaner and there is no appearance of oil leaking from the spindles.

Spindles have been furnished to two of the southern textile colleges and also three of the New England textile colleges, and arrangements have been made for certain detail tests to be conducted. It is hoped that with the tests run in these colleges, together with additional tests which will be run by the mills themselves, within the next few months, we will be able to tell more definitely what the SKF spindle can do in the way of improving the quality of yarn and also in the way of increased production.

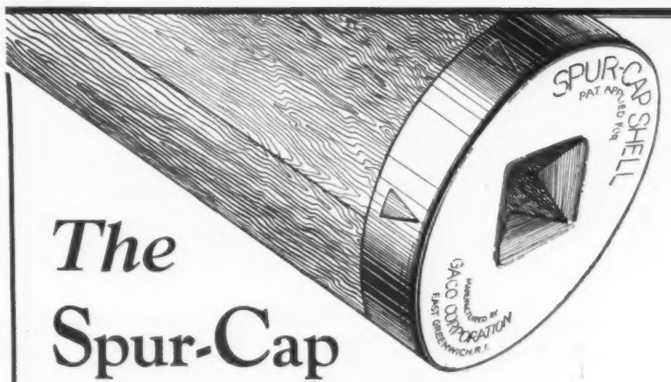
High Speed Possible

In another mill in New England, in which 272 spindles have been installed, it has been found that there are usually less ends down than with the plain bearing frames, which is a fairly good indication of improved quality of yarn. Questions have been asked about how fast the SKF spindle can be operated in order to gain increases in production. It is safe to say that these spindles can be satisfactorily operated at speeds up to 20,000 r.p.m., but this then presents a problem to the mill depending upon the number of yarn being spun, the quality of the cotton, and the speed at which the traveler can be operated.

Although in this country our activities with this spindle have extended over a period of approximately a year and a half, a great many spindles have been in operation in foreign countries for six and a half years, and laboratory tests have been conducted in such a way as to approximate 12 years of mill service with satisfactory results.

Although we have spoken in this article of the SKF spindle, the complete spindle can be obtained from all builders of cotton spinning machinery to all of whom we supply the SKF roller bearing bolster.

This subject of anti-friction spindles should be of particular interest to every mill owner because of the keen interest today in the more efficient and economical operation of their equipment in an era of high wages and keen competition. The initial investment can be offset by the many advantages which unquestionably can be gained through the use of the anti-friction bearing spindle, and what we ask is the opportunity, either directly or through the various machinery manufacturers, to present in greater detail the already proven advantages of this type of spindle.

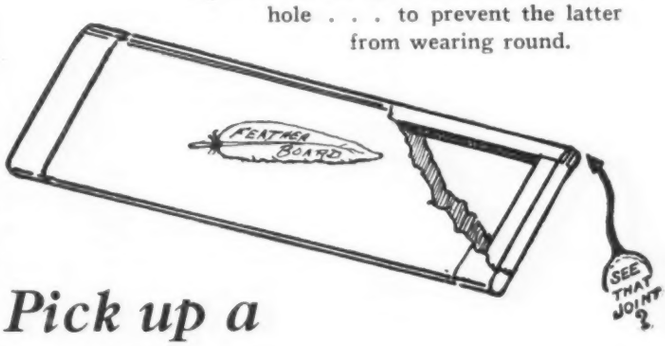


The Spur-Cap *Can't Wiggle Loose!*

EVEN under the wear and tear of hard everyday work, this SPUR-CAP remains firmly in place . . . tightly fixed to the wooden shell. It can't come off. Can't even wiggle loose. For its sharp tongues grapple deep into the wood . . . hold the stout metal cap immovable through years of rough service.

The shell, itself, can't crack or splinter — the SPUR-CAP prevents that. It can't warp, either, because it's built of proper lumber treated for the purpose.

Then, too, this modern SPUR-CAP offers a bushing between the mandrel and the square hole . . . to prevent the latter from wearing round.



Pick up a FEATHERBOARD

COMPARE its weight with that of the reel you are now using. You see why it's called "FEATHERBOARD." Then compare its construction. You will find the ends, side rails and mullions scientifically mortised. That is why the reel is in its original condition when the last yard of fabric is removed. Its smooth sides and rounded edges keep the fabric from wrinkling . . . and you can use the ends for display.

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Modern mills use this different light because workers *see better!*

Cooper Hewitts in the weave shed of the Lancaster Cotton Mills. Printed reproduction can't do justice to the unusually good illumination here.

EVER stop to think why green or yellow glasses are worn in the glaring light of the seashore, why those doing close work so often wear green eye-shades, why lamp-shades and window shades usually are green or yellow?

Light of these colors is kindest to the eye,—and produces much better seeing conditions, far less glare and decidedly less heat than other light from which eyes seek protection.

How logical then—when both quantity and quality of work are so dependent upon good vision—to choose the cool yellowish-green light characteristic of CooperHewitts for mill use. With these lights nothing is needed to shade the eyes, for there are no glare-producing rays to irritate them.

And what is the natural result?

Manufacturers in practically all industries today are turning to Cooper Hewitts —and finding them even better than daylight.

Many are burning Cooper Hewitts 24 hours a day even under skylights and close to windows because the light is uniform and it reveals details not seen in daylight!

Bulletins explaining in simple but scientific detail why Cooper Hewitt lighting is better are yours for the asking. But after all, the proof of the pudding is in the eating. A trial installation in your own mill—made without obligating you —is the best proof of merit. Why not ask us for such an installation, today? Cooper Hewitt Electric Company, 849 Adams St., Hoboken, N. J.

BETTER THAN DAYLIGHT

COOPER HEWITT

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MILL NEWS

COTTON

New Construction and Additions

Merrimack Mfg. Co., Huntsville, Ala., has replaced 360 H model looms with big E models which are now in operation.

***International Shoe Co.,** Malvern, Ark. Bids on material to be used in the construction of this plant for making cotton cloth for shoe linings are being sought and actual construction is expected to begin early in May.

***Echota Cotton Mills,** Calhoun, Ga. The new addition which this company is building is reported to be 185 x 150 ft., one-story. A 50 x 150 ft. warehouse will also be erected.

***Royle & Pilkington Co.,** Mt. Holly, N. J., has let contract for the building it is constructing in Waynesville, N. C., to T. C. Norris, Waynesville. The plant will be completed by July 1. It is reported that the mill will be operated under the name of the Hazel Wayne Co., under the direction of J. M. Long, president; S. H. Bushnell, vice president, and Frank Miller, secretary and treasurer.

Slade Products, Inc., Watervliet, N. Y., report plans under way for taking over additional space in the Barker Bldg. to meet the rapid expansion of the business. The Troy (N. Y.) Chamber of Commerce has offered the firm larger plant facilities in that city.

***Gastonia (N. C.) Weaving Co.** A car load of new machinery for the addition which this company is building has arrived and will be installed immediately.

***Cleveland Cloth Mills Co.,** Shelby, N. C. Work on the $200,000 addition which this company is building is progressing. Thirty additional homes for employes are being erected. The company has inaugurated a 55-hour a week work schedule.

Spray (N. C.) Cotton Mills. It is reported that plans are being drawn by J. E. Sirrine & Co., engineers of Greenville, S. C., for a 45 x 80 ft. warehouse, 23 x 70 ft. opener room and an office, to cost about $70,000.

***Airial Mill,** Easley, S. C., being built by A. Foster McKissick and associates, will be ready for the installation of machinery by Nov. 1. This plant will at first be equipped with 20,000 spindles, but the intention of its owners is to increase this number as business warrants. The main building is 500 x 100 ft. with a 50 x 1000 ft. warehouse. One hundred employes' houses are going up in the mill village.

Manetta Mills, Lando, S. C., will let contract in the near future for a new two-story, 60 x 90 ft. dyehouse.

***Gaffney Mfg. Co.,** Spartanburg, S. C. Walter S. Montgomery, Jr., treasurer and general manager of the plant of the Gaffney Mfg. Co. announces that mill No. 1 will be torn down and a three-story modern mill structure of brick and steel erected in its place in the immediate future. Lockwood, Greene & Co., Spartanburg, are making a preliminary survey with this end in view. The new building will cost approximately $160,000, without equipment. The first two floors of the new building will house looms.

Piedmont (S. C.) Mfg. Co., will replace three of its old boilers with one new 721 h. p. water tube boiler built by the Walsh & Weidner Boiler Co., Chattanooga, Tenn. The boiler will have Walsh & Weidner water walls and water floors. It will be fired with pulverized coal ground in a Kennedy mill built by Kennedy-Van Saun Mfg. & Eng. Corp., New York. Other equipment includes a Ljungstrom air preheater built by the Air Preheater Corp., New York. The steam plant is operated in connection with the mills' own water power from Saluda River. J. E. Sirrine & Co., Greenville, S. C., are the engineers.

Fact and Gossip

***Amoskeag Mfg. Co.,** Fitchburg, Mass., has sold Mill C of the Parkhill division, now idle, to J. G. Fuller, vice president of the Berg Mfg. Co., Inc., Gardner, Mass., for $100,000. Mr. Fuller, it is said, plans to rent it to different industries.

***American Thread Co.,** Holyoke, Mass. One of the buildings of this company, recently acquired by the municipal power department, has been leased to the Stuebing-Cowan Co., Cincinnati, O., manufacturers of industrial trucks, for a factory branch, and will be remodeled and occupied at early date.

***Everett Mills,** Lawrence, Mass., which were liquidated last summer, will be dismantled at once, as cards, looms and other types of machinery have been purchased by Southern interests.

Hoosac Cotton Mills, North Adams, Mass., which have operated 4 days a week for the last 3 months have resumed a full time schedule of 5½ days a week.

Watervliet, N. Y. H. J. Bartle Mfg. Co. has sold its plant to a Troy industrial firm which is remodeling the structure for prospective textile firms seeking sites in that vicinity. The factory has been idle for some time.

Henrietta (N. C.) Mills have secured an injunction restraining the county of Rutherford, N. C., from collecting $29,222.19, claimed to be due in taxes for the past year.

Jos. Adamson & Co., Philadelphia, Pa. This concern, manufacturers of tapes, webbings and bindings, Columbia & Germantown Aves., is liquidating and upon completion of sale of mill building and machinery, will retire from the textile business. The company has an equipment of approximately 200 looms.

John J. Kenyon Mfg. Co., Pawtucket, R. I. It is reported that this mill, which has been in the hands of a receiver, may be reopened in the near future. The site has been recently purchased by Samuel Bander, Providence, who has asked bids for renovation and repairing of the plant. Mr. Bander will probably lease or sell the mill for operation.

Clyde Mills, Inc., Westerly, R. I., have filed notice of increase in capital from $125,000 to $175,000.

***Gossett Mills,** Anderson, S. C. The merger of the Gossett Dyeing & Finishing Co., Riverside Mfg. Co., Toxaway Mills, Ladlassie Mills, Anderson, and the Williamston (S. C.) Mills has been ratified by stockholders. The new concern will be chartered at $5,000,000, with $4,000,000 stock issued at the outset. Stock in the mills affected may be exchanged for stock in the Gossett Mills.

WOOL

New Construction and Additions

Haartz Auto Fabric Co., Watertown, Mass., according to F. B. Kilduff, general manager of the mohair velvet division, is contemplating taking over another building and installing additional equipment in the near future.

***Uxbridge (Mass.) Worsted Co., Inc.** The new two-story, 40 x 72 ft. addition which this company is building will be used as a picker building. Construction began on Apr. 15 and the building will be in operation on July 1. No new machinery will be purchased to equip this addition.

***Maanexit Spinning Co.,** Webster, Mass. Bids have closed for the proposed addition to the plant which will cost about $65,000. Dwight Seabury Co., Pawtucket, R. I., is the architect.

Chatham Mfg. Co., Elkin, N. C., has let contract to T. C. Thompson & Co., Charlotte, for the erection of an annex to the plant to be used to house the raw stock, cleaning and mixing machinery. The building is to be brick, steel and concrete. The addition that has been under construction for the past 4 months is nearing completion and when machinery is installed and placed in operation the output of the mill will be increased 33⅓%.

Oregon City (Ore.) Mfg. Co. Expansion of the woolen mills of this company will result from the sale of $500,000 of 6% serial coupon notes.

Bonin Spinning Co., Woonsocket, R. I., has secured a permit for a two-story brick and steel mill, 50 x 100 ft., on Mendon Road, to cost $15,000. General contract recently was let to the Enterprise Building Co., Woonsocket.

Dunn Worsted Mills, Woonsocket, R. I., are reported to have filed plans for a one-story filtering plant unit, 40 x 50 ft., to cost about $16,000.

***Bedford-Johnson Co.,** Bedford, Va. Bedford citizens have raised a $130,000 loan to the Bedford-Johnson Co. in the form of 6% bonds secured by a first mortgage on the new $450,000 building which the company will erect to replace its plant, recently destroyed by fire. The new plant will have 70 automatic looms and the number of employes will probably be doubled.

***Harding Carpets, Ltd.,** Brantford, Ont., Canada. The new dyehouse which this company is constructing will be completed and in operation on May 15. Hussong dyeing machines, Lorimer scour and Bailey dryers have already been purchased and installed in an available building.

Fact and Gossip

D. E. Cummings Co., Skowhegan, Me. The main office of this company will be moved from 176 Federal St., Boston, to the mill at Skowhegan.

***Adams (Mass.) Woolen Mills, Inc.,** recently purchased by Arthur Bronstein of the Maine Woolen Co., Camden, Me., are

*Indicates previous mention of project.

Over 375,000

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Frost Proof Closets

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The ideal water closets for Factories and Mill Villages, where thousands have been installed.

The most durable water closets made—excepting none.

They require no pit.

They save water.

All bowls have enameled rims. In service daily, winter and summer.

No. 5 Factory Closet

This fixture fills the demand for a strong and durable automatic water saving closet outfit for factory use. The valve device is extremely simple and repairs, though seldom necessary, can be made by removing the valve cap back of bowl.

Every Fixture Tested Under Hydraulic Pressure Before Leaving Factory

Insist on Getting the Vogel

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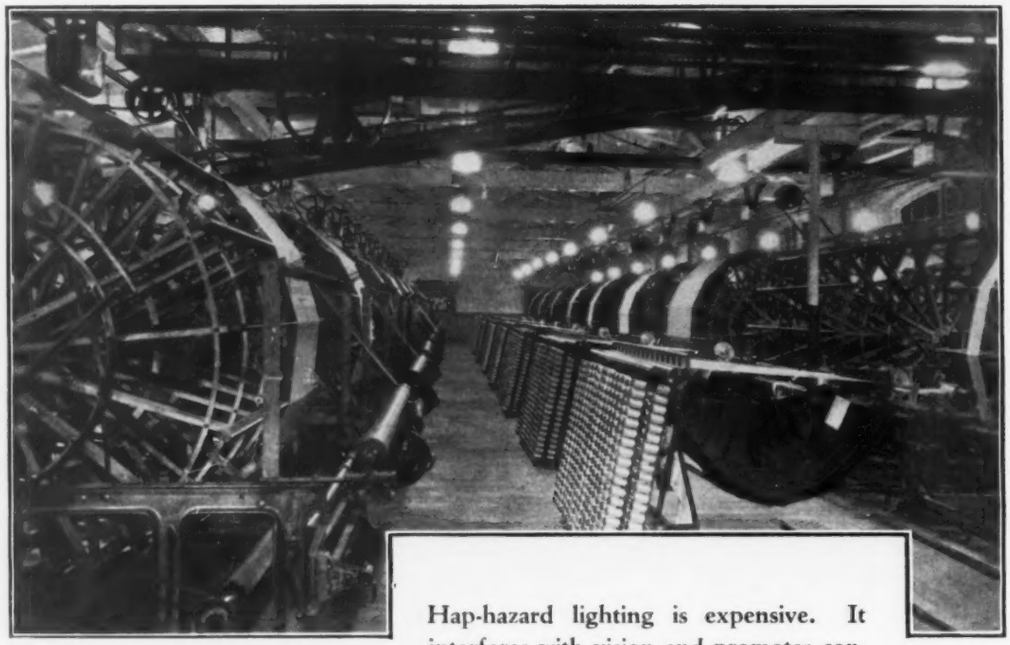
PLANNED LIGHTING *cuts costs in* SILK MILLS



Schwarzenbach Huber Co., Warbing Mill, Altoona, Pa. Photo taken without flash-lights—unretouched

Hap-hazard lighting is expensive. It interferes with vision and promotes conditions which cause accident, spoilage and under production per worker.

Planned lighting is economical. It costs only a small per cent of the annual payroll to install, and cuts operating costs by increasing individual production and lessening labor turnover. In some instances it also reduces current consumption for lighting.

Planned Lighting for Silk Mills is not by rote or approximation. It is specifically planned to fit the job according to engineering knowledge gained thru many years of continual research and practical experience in Silk Mills.

Send for this

This Data booklet on Silk Mill lighting contains valuable information for your plant engineer or the lighting contractor you employ. Address your request to the Engineering Department, Holophane Company, Inc., 342 Madison Ave., New York City, or the branch office nearest to you.

HOLOPHANE

NEW YORK SAN FRANCISCO MILWAUKEE TORONTO CHICAGO

Mill News—Continued

reported to have started preliminary operations under new managements. Six new pickers have been installed and put in operation.

***Paris Woolen Mills,** Brownsville, Ore., a new company which recently took over the plant of the Brownsville Woolen Mills, is under the direction of R. D. Paris, proprietor. The mill is equipped with 820 spindles, 12 broad looms, 2 wool cards, 2 pickers and 1 garnett.

Pascoag (R. I.) Woolen Mills have resumed operation following a 3-day shutdown because of a broken water wheel.

American Woolen Co., Providence, R. I., will discontinue operation of the Weybossett and Valley Mills and will remove all machinery to the Riverside plant.

Oriental Textiles Co., Oshawa, Ont., Canada, is working at present at full capacity.

***Pembroke Woolen Mills,** Pembroke, Ont., Canada. It is reported that this mill will be transferred to Edmonton, Alta., and that W. J. Westaway Co., Ltd., textile engineers of Hamilton, Ont., are selecting a suitable location for the plant.

KNIT

New Construction and Additions

***Westcott Hosiery Mills,** Dalton, Ga. Contract for complete construction of the extension to the Westcott Hosiery Mills has been awarded to Barrett Construction Co., Dalton, through the Spartanburg office of Lockwood, Greene & Co., Inc.

Wayne Knitting Mills, Inc., Fort Wayne, Ind. Installation of 22 full-fashioned knitting machines in this plant will be completed in June. Cost of this equipment is approximately $165,000. Nine machines have already been placed and are in operation.

Parker Hosiery Mill & Dye Works, Frostburg, Md., is reported to be planning the installation of 30 additional knitting machines for making children's hosiery.

Seneca Knitting Mills, Inc., Seneca Falls, N. Y., is planning to locate a branch plant in Lyons, N. Y.

Lillian Knitting Mills Co., Albemarle, N. C. At a recent meeting of the stockholders it was decided to increase the capital stock of the company to $250,000 and to erect a one-story addition to be equipped for the manufacture of full-fashioned hosiery.

***Mock, Judson & Voehringer, Inc.,** Greensboro, N. C. Work has started on the new 105 x 126 ft. addition to the hosiery plant of Mock, Judson & Voehringer, Inc., under the direction of C. C. Hartman, Greensboro, architect. Contract has been let to William F. Lotz, Philadelphia. The addition will more than double the floor space of the present building and will allow for the installation of 54 knitting machines. The estimated cost is $75,000.

***Novelty Hosiery Mills,** Marion, N. C., is the name of the new hosiery mill which has been opened at Marion by W. K. M. Gilkey, for the manufacture of boys' fancy golf hose. Capitalization is $68,000 and officers are W. K. M. Gilkey, owner, and T. B. Powell, superintendent. The plant is equipped with 20 Banner diagonal stripe knitting machines.

***Wyrick Hosiery Mills,** Mebane, N. C. G. Arnell, of the Standard-Trump Bros. Machine Co., Wilmington, Del., has been here for several days installing new parts on the machines at the Wyrick Hosiery Mills.

***Jantzen Knitting Mills,** Portland, Ore. The new one-story, 100 x 100 ft., branch plant which this company is building in Sydney, Australia, will be in operation in June. E. C. Klindworth is managing director of the plant and William Tarleton, secretary.

***Tohickon Hosiery Co., Inc.,** Quakertown, Pa., is increasing production at its mill, following installation of additional equipment.

Berkshire Knitting Mills, Wyomissing, Pa., are reported to have begun work on a four-story, 110 x 850 ft., annex.

***Powell Knitting Co.,** Spartanburg, S. C., has let contract for the installation of an automatic sprinkler system in its new two-story extension, to Crawford & Slaten Co., Atlanta, Ga. Lockwood, Greene & Co., Inc., Spartanburg, are engineers and architects.

***Spokane (Wash.) Knitting Mills, Inc.,** completed construction on Apr. 20 of their new one-story, 30 x 20 ft. addition. The building which cost $3,500 will be equipped with 7 finishing machines.

Portage (Wis.) Underwear Mfg. Co. has announced plans for immediate expansion if its proposition for a $50,000 stock subscription is accepted in Portage.

Celtic Knitting Co., Ltd., Montreal, Que., Canada. A. C. Howatson, vice president and managing director of this company, is reported to be in Europe for the purpose of buying new machinery to increase the mill capacity 100%.

***St. John's (Que.) Silk Co., Ltd.,** Canada. This new company has leased a plant at St. Louis and St. Joseph Sts., for the manufacture of full fashioned hosiery, and equipped it with 20 knitting machines. Operation will begin at once. The company is capitalized at $50,000 and officers are Ernest M. Torbet, president and Oliver B. Bradley, treasurer.

Fact and Gossip

Davis & Alcott Co., Gadsden, Ala., is moving its Attalla (Ala.) Hosiery mill to Gadsden where it is being merged with the Gadsden plant.

Midland Park (N. J.) Knitting Mills, Inc., recently organized with a capital of $125,000, to operate a local mill, will be represented by Charles Faner, Midland Park, one of the incorporators. Other incorporators are Kurt Saettler, Clifton, N. J., and August E. B. Lausberg, Haledon, N. J.

SILK

New Construction and Additions

Armion Textile Co., Clinton, Mass., is reported to be installing additional machinery.

***A. Schottland, Inc.,** Paterson, N. J. Construction of the first unit of the southern plant of this company at Rocky Mount, N. C., has begun and contract has been awarded to D. J. Ross & Son, Rocky Mount. The building will be of steel and brick construction and will contain approximately 30,000 sq. ft. Upon completion on July 1, 200 looms and auxiliary machinery for the manufacture of Japanese broad silks will be installed. About 300 people will be employed.

Onondaga Silk Co., Inc., Ogdensburg, N. Y., is reported to have plans for expansion and installation of new silk looms in the near future to replace old machinery. The plant is now running at capacity.

Meyersdale, Pa. Under direction of E. O. Kyle, Meyersdale, a company is being organized to operate a local silk mill. C. Kendricks, Pottsville, Pa., architect, has completed plans for two-story plant, estimated to cost $50,000, to be occupied by new company.

Fact and Gossip

***Julius Breuer & Sons, Inc.,** Paterson, N. J., recently reported incorporated, is a new company formed by Julius Breuer, president and treasurer of the Puritan Silk Co., Paterson, to take over the Puritan Silk Co.'s plant. Capital stock is $125,000; Julius C. Breuer is president and treasurer and Emory A. Breuer, agent.

RAYON

New Construction and Additions

***American Enka Corp.** will be the name of the American branch of the Netherlands Artificial Silk Co. (Dutch Enka Co.) which will be established somewhere in the East for the manufacture of all the types of viscose yarn now made by the Dutch parent company.

***American Chatillon Corp.,** Rome, Ga., the subsidiary of La Soie de Chatillon of Italy, which is planning to locate at Rome, Ga., has filed a Delaware charter to deal in artificial silks. It is expected that both the viscose and cellulose acetate processes will be used. Capitalization is $10,000,000, to be made up of 1,000,000 shares of no par value and incorporators are T. L. Fray, A. V. Lane and A. L. Miller, of Wilmington.

***Burlington (N. C.) Rayon Corp.,** which is in process of construction at Burlington, is headed by Henry A. Johnson, president. The brick building will be one-story in height.

DYE, BLEACH AND FINISH

New Construction and Additions

***Summit Dyeing Co., Ltd.,** Toronto, Ont., Canada, has moved into its new building at 471 Adelaide St. W. Additional equipment has been installed in the new quarters and a silk weighing service has been established under the direction of specialists from the United States and Germany.

Fact and Gossip

Huntsville, Ala. According to an announcement by James M. Gill, secretary of the Chamber of Commerce of Huntsville, a cotton goods finishing plant will be established there shortly.

Winston Converting Co., Winston-Salem, N. C., is reported incorporated by A. T. Dize and William H. Donnelly, for converting canvas and duck.

* Indicates previous mention of project.

NEEDLES, than whom

THE toastmaster at any gathering of textile manufacturers might well say:

"As for securing knit fabrics that are super-excellent use Torrington Needles, than whom there are no than-whomer."

The red box with the green label

The Torrington Company
ESTABLISHED 1866
Torrington, Conn., U.S.A.

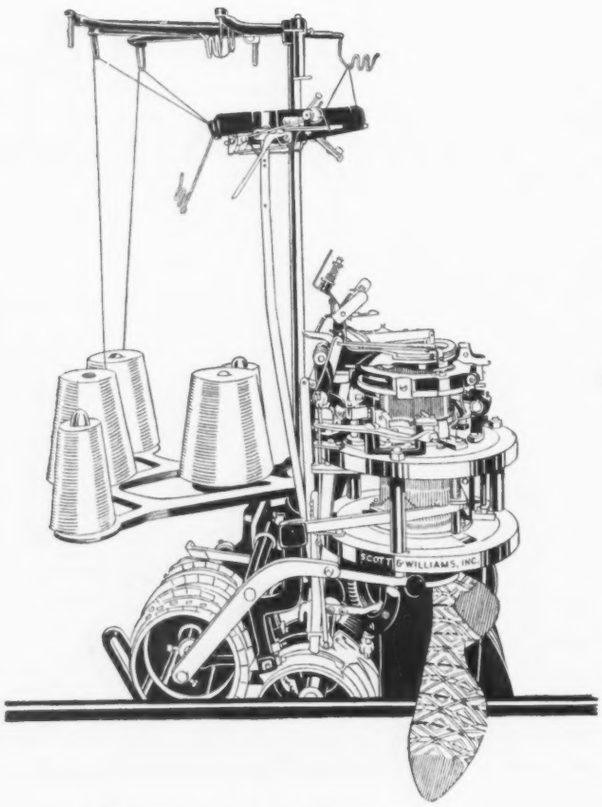
BRANCHES:

THE TORRINGTON COMPANY, CHERRY AND JUNIPER STS., PHILADELPHIA
C. B. BARKER & CO., LTD., 140-144 W. 22ND STREET, NEW YORK
LOS FABRICANTES UNIDOS, 964 CALLE BELGRANO, BUENOS AIRES

FACTORIES AT:

TORRINGTON, CONN.
AACHEN, GERMANY
COVENTRY, ENGLAND
UPPER BEDFORD, CANADA

EXCELSIOR TORRINGTON



SPIRAL FLOATING
STRIPING MACHINE

FANCY EFFECTS are the VOGUE

THE new Spiral Floating Striping Machine meets the manufacturing requirements of smart fancy hose. The effects are produced by the well known floating stitch system. The horizontal striping mechanism can be arranged to control either the facing yarn or the backing yarn.

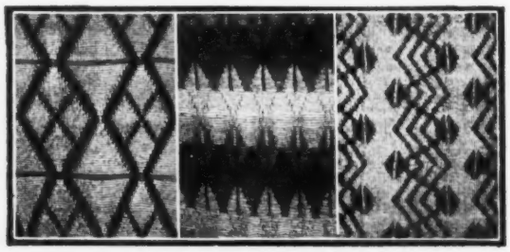
The advantages of this new machine are increased through the fact that it is built in sizes 3 inches up to 4 inches in diameter. It can be equipped with as many as six yarn changing fingers, which gives a range of five different colors under control of the pattern mechanism, exclusive of heel and toe colors. Plain stockings can be produced by throwing the fancy effects out of action.

Established 1865

SCOTT & WILLIAMS

Incorporated

366 Broadway New York, N. Y.



KNIT GOODS

Cooperative Effort Urged for Hosiery

Various Proposals Under Consideration, but No Definite Decision Reached

The principal activity in the hosiery trade at the moment is the apparent consideration of forms of association. Whether these be designated as councils, institutes or what not they are all apparently being urged for the purpose of doing something by cooperative effort to decrease overhead in manufacturing and distribution and to eliminate certain of the wastes which are recognized as important factors in the production and distribution of this type of merchandise.

Cooperation the Watchword

In the case of the New England manufacturers who have been urged to come together in a cooperative movement, plans apparently are moving forward though temporarily halted by the personal obligations of the principal proponent. It is stated that the idea is being developed very generally among New England manufacturers that a branch of the hosiery association based on geographical lines could advantageously be established. Considerable has been said about the desirability of cooperative buying and cooperative selling, but as far as can be learned neither of these projects has reached any very formidable proportions. There are many who admit the possibilities of cooperative buying by manufacturers but commparatively few can see the feasibility of cooperative selling. The personal contacts of the manufacturer or his selling agent with the trade and the friendships which have been built up through a long period of years are matters which are urged as handicaps to the consummation to this idea.

With regard to the progress of the Full-Fashioned Institute little definite development is reported at this writing. It is understood that the committee appointed at the meeting in Philadelphia at the time of the hosiery convention and exhibit has been advised that it is the sense of many connected with the industry that the formation of such an institute was advisable and it appears to be the function of this committee to decide whether the formation of such an organization should be conducted independently of the National Association or as a branch of it. Too little progress has been made to indicate just what direction efforts will take. But all of these ideas are simply a reflection of the uncertainty and dissatisfaction which exists and the desire to do something to improve conditions. Nothing more has been heard of the alleged effort to combine certain ho-

(*Continued on page 171*)

Demand for Underwear Changes

Requests of Jobbers for Concessions More Frequent This Season

"I AM not going to be so — careful in the future whom I sell as I have been in the past." This was the significant remark of a prominent underwear agent who has up to the present time stuck religiously to the sale of his product to the jobber. He was talking about the unsatisfactory conditions surrounding the underwear market and the possibility of improvement. In the same vein he continued "I do not believe things are going to get better of themselves. Something drastic will have to be done by those who are responsible for the distribution of underwear mill products. I am tired," he said, "of tying myself to the tail of a kite that does not fly."

Amplifying his thought with regard to the present jobber method of distribution, he further remarked, "the trouble with the jobber seems to be that he is doctoring the doctor instead of trying to doctor himself. You must remember that the jobber cannot exist unless he has someone to manufacture for him, and if he continues to try to reform the methods of the manufacturer he may find that he has no manufacturer upon to whom to depend."

Dissatisfied with Conditions

It is natural that in a market such as this, where there is a paucity of orders and everyone is struggling to secure business, there should be a degree of dissatisfaction regarding the whole situation and considerable discussion as to how conditions can be improved. The significant remark appearing at the beginning of this article is a reflection of many ideas regarding the necessity of cultivating other classes of trade than the wholesaler if a mill's product is to be satisfactorily merchandised. The growth of the chain store business and the continuing trade which comes back to the selling agent when once his line is established is certainly a temptation to the most conservative distributer. The fact is there are few in the primary market who would not consider a proposition from a reliable chain for bulk merchandise, even though it might interfere to a degree with established trade in other directions. Each season shows a marked expension in the volume of orders taken from this type of buyer by the mill representative. It is appreciated too that if proper service is given, combined with satisfactory deliveries and good value merchandise, the chain store operator is not likely to change to other lines even though he may secure the advantage of lower prices. The heads of his various stores become accustomed to one line of goods and if he were to supplant a specific line with some other he would find considerable sales resistance from his various units. All this makes for satisfaction in dealing with the chains.

Demands from the Jobber

As the wholesaler is confronted increasingly with the competition of the chain store he makes more and more demands upon the mill representative. This may ease the burden for a while but the advantage is only short lived and then something else is demanded. In this connection the mention last week in these columns of requests for merchandise to be sent out to jobbing houses on consignment is in point. It is true that there is no general request for merchandising of this character, but it would appear as though this season there had been a greater number who have attempted to secure this concession from the selling agent. This may be due to the fact that in certain instances manufacturers have fallen for the argument of the buyer and this fact has been used upon others in the selling market as the reason why they should follow suit. In certain instances manufacturers are consenting to carry stock in jobbing centers where they may be able to supply houses, particularly of the chain store and catalog variety with goods at short notice. This amounts almost to the same thing as sending goods on memorandum for the merchandise is not billed until called for by the buyer.

The jobber argues in favor of this policy that there is no difference between carrying stock on his shelves or in the warehouse of the manufacturer, but it is pointed out to such pleaders for this concession that the majority of manufacturers do not carry stock in warehouse; they cannot afford to pay the interest charges that such accumulations involve. This statement can be modified to a degree because the manufacturer is not able to confine his product to the actual dozens which his orders involve. If he has orders on his books for 300 cases, it may be necessary for him to make up 325 or 350 cases in order to have the proper assortment. But as a general principle the manufacturer has come to adjust himself to the current method of hand-to-mouth buying by eliminating an accumulation of goods for which he has no positive guarantee that they will be sold.

Demand for Fall Dating

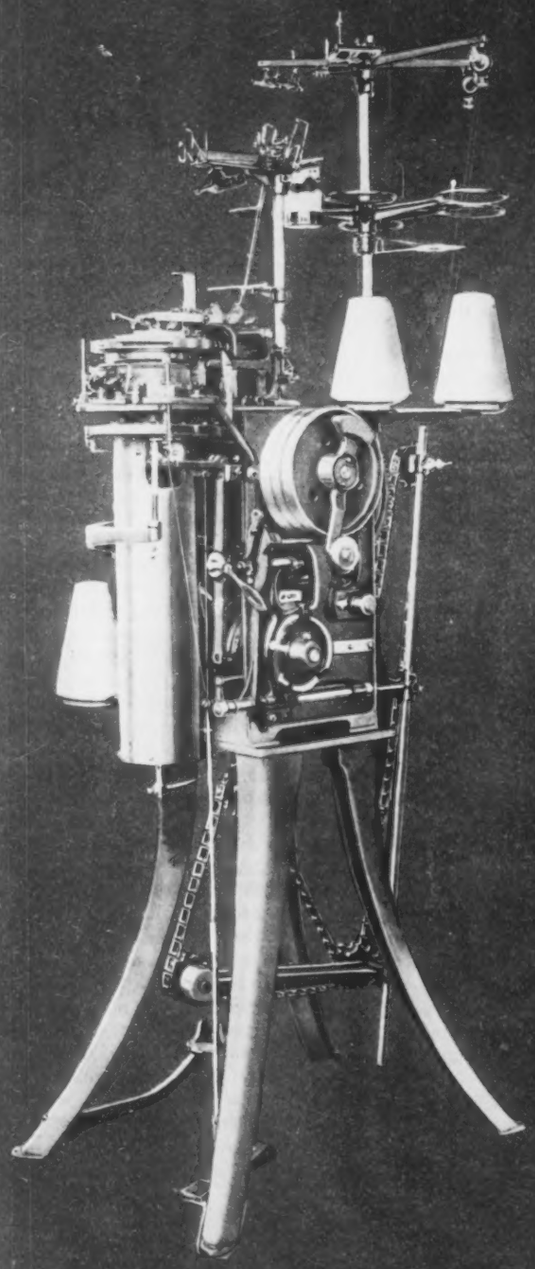
Another request which has been noted in this altogether peculiar season has been the resumption of fall dating on underwear. This is particularly true in reference to wool goods and means if accepted by the manufacturer a reversion to pre-war practices which have been generally done away with. Of course the manufacturer is willing where goods have been made up and are held awaiting, say July delivery, to ship them out immediately if so requested and give the buyer the benefit of the July quotation, but this is a very different matter from acceding to a request for November dating which has been reported in certain directions but which as far as can be learned has been almost universally refused.

Prices May Advance

The strengthening position of raw material may have a decided influence upon prices for heavy-weight underwear before the season is over. It has been reported in certain quarters that an advance is imminent, and if all the stories with regard to the unpreparedness of manufacturers in respect of their raw material are to be believed, it would seem almost imperative that such an advance should take place. At this writing no concrete evidence of price change is to be found and yet a good many selling agents claim they would not be surprised to hear of such a happening any day. Those who did not reduce their prices in line with others who made revisions are now congratulating themselves on the wisdom of their attitude. They appreciate that if they had yielded to the pressure brought to bear upon them to join the procession in lowering their prices, they would have eliminated a very fair proportion of profit which they have made on their season's product. It is very probable that if an advance does occur it will have a decided effect upon buyers, many of whom have not taken care of their season's requirements on fall merchandise.

While it is true that during the last few months manufacturers of spring goods have been behindhand on delivery and many have received cancellations on this account, duplicate business has not been satisfactory. Buyers have simply used their endeavors to secure shipments of goods which they did not order early in the season, and in the case of cancellations it is not reported that goods cancelled have been replaced by other merchandise. Given a few weeks of warm spring weather this condition may be decidedly changed; it then remains to be seen whether belated orders can be filled on time to make them salable by the wholesaler.

Stitchbound Hosiery Mills, Reading, Pa. Damage estimated at over $35,000 was caused by a fire which broke out in this plant on Apr. 28. The plant, which has been running only 3 days a week, was not in operation at the time.



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WILDMAN
THE WORLD'S STANDARD

WILDMAN MANUFACTURING COMPANY
Norristown, Pa.

We have issued a new edition of the complete and informative book, "The Science of Knitting." Price $2.00.

WILDMAN
SPRING NEEDLE KNITTER

Knit Goods—Continued

Unfilled Orders for Underwear Gradually Dwindle

Unfilled orders for knit underwear on April 1 amounted to 2,271,164 dozens, compared with 2,275,243 on March 1 and 2,311,765 on Feb. 1, according to report by the Dept. of Commerce, Washington, D. C. New orders received during March totaled 1,208,357 dozens against 1,025,274 in February. Shipments during March were 1,198,487 dozens against 1,042,357 in February. Cancellations in March were 13,949 dozens against 19,439 in February.

Seamless Hose Trade in England

W. E. Booton, Ltd., Leicester, Eng., who handle the knitting machines of the Standard Trump Bros., state they have sold since July 1927, 250 of the 260 needle 3½ inch model H machines for the production of rayon hose and over 400 of the 300 needle 3½ inch model H machines for pure silk seamless hose. The product of these machines, which represents a high type of seamless hose, is being sold at good prices in competition with full fashioned hose of the same grades.

Phoenix Hosiery Mills Makes Large Foreign Shipment by Parcel Post

MILWAUKEE, WIS.—The Phoenix Hosiery Co. here, is credited by post office officials as making the largest single foreign parcel post shipment ever made from the Milwaukee post office.

The company shipped 1,379 packages, weighing over 16,000 lbs., to various foreign countries on April 18, at a total postage cost of $2,552.

Estimate Milwaukee Hosiery Mills Make Over 100,000 Pairs Weekly

MILWAUKEE, WIS.—The Association of Commerce survey announced last week, shows that the hosiery mills of the city are producing more than 100,000 pairs per week and employing over 6,000 operatives.

Activity of Wool Machinery During March

WASHINGTON, D. C., April 27, 1928.—The Department of Commerce announces the following statistics on active and idle wool machinery for March, 1928, based on reports received from 886 manufacturers, operating 1,073 mills. This is exclusive of 9 manufacturers, operating 13 mills, who failed to report for the month.

Month	Looms: Wider than 50 in. reed space	Looms: 50 in. reed space or less	Looms: Carpet and rug	Sets of cards	Combs	Spinning Spindles: Woolen	Spinning Spindles: Worsted
Per cent active of total number of machines							
Mar., 1928	55.4	64.8	66.9	75.2	68.3	73.2	62.1
Feb., 1928	57.6	62.2	66.3	72.4	70.9	71.1	65.7
Mar., 1927	60.2	66.5	67.0	77.2	74.7	74.8	66.9
Per cent active of total hours (maximum single-shift capacity)							
Mar., 1928	57.3	56.9	68.3	79.2	69.8	76.4	60.9
Feb., 1928	60.2	51.3	67.0	78.1	80.3	77.0	68.0
Mar., 1927	61.2	63.4	66.4	79.9	81.4	76.7	66.2

Hosiery Market

(*Continued from page 169*)

siery manufacturers in a physical merger and denials from important officials connected with certain of the supposed plants to form such a merger would seem to lend form to the opinion that the matter is not likely to culminate in any actual combination.

Possibilities of Novelties

The greater competitive character of the full fashioned trade as well as the struggle of the seamless manufacturer to find new outlets for his merchandise are productive of expressions with regard to novelties that are being put on the market here and there. Of course, the most important development in this direction is the so-called fishnet stocking on which experiments are being made. A good many manufacturers are skeptical as to how much of this product can be absorbed and are therefore proceeding cautiously on the proposal to put in equipment where their manufacture is urged. On the other hand it is known that several manufacturers have decided to go into this novelty game in a definite way, involving a considerable investment. It remains to be seen how this character of hose is received by the trade at large.

Profits in Hosiery

It has been a matter of decided interest to the trade to note the report of profits made by certain mills which have just completed a merger. The offering announced by this merger has apparently been eagerly subscribed to on the basis of reported earnings by the component plants. It is refreshing to the trade to hear of hosiery mills who have been able to announce earnings during 1927 in excess of $700,000. It is the belief of the trade that such a showing could only be made as the result of rigid reduction in overhead, the operation of plants on a day and night basis, and the production of a product which is popular in price and easy to sell. It is certain that the average hosiery mill would be content with considerably less than practically 12% which is the figure reported as the percentage of profit made by the mills in question. It only shows that it is possible to operate hosiery mills at a profit in spite of all that may be said to the contrary.

An absence of buyers in the local market is the most remarked feature of the situation at present. No interest in anticipating requirements is apparent and the small day-to-day business is decidedly of a hand-to-mouth character with no outstanding feature in any direction. Fancy half hose seem to be dragging more or less but with no indication that there is any definite trend away from this type of merchandise in favor of staple goods. Infants' hosiery continues in small request with many buyers unwilling to take action on lines which they know they must eventually have to purchase.

PARAMOUNT
Interchangeable
TOE FORMS
5 SIZES
ON ONE FORM

An advanced type of changeable-toe form incorporating distinctive features of superiority.

Toes are solid throughout, insuring positive heat conductivity. No air pockets or spaces to prevent rapid and uniform heat transfusion to the toe members.

Toes are interchangeable and are fastened to the forms with a positive locking device which eliminates, entirely, faults of looseness and binding common to all friction joints. Unlocking the toes for change is accomplished instantly, and leverage devices for removing toes are not required.

All tearing edges eliminated. A special jointless edge at the toe is absolute protection against thread pulling.

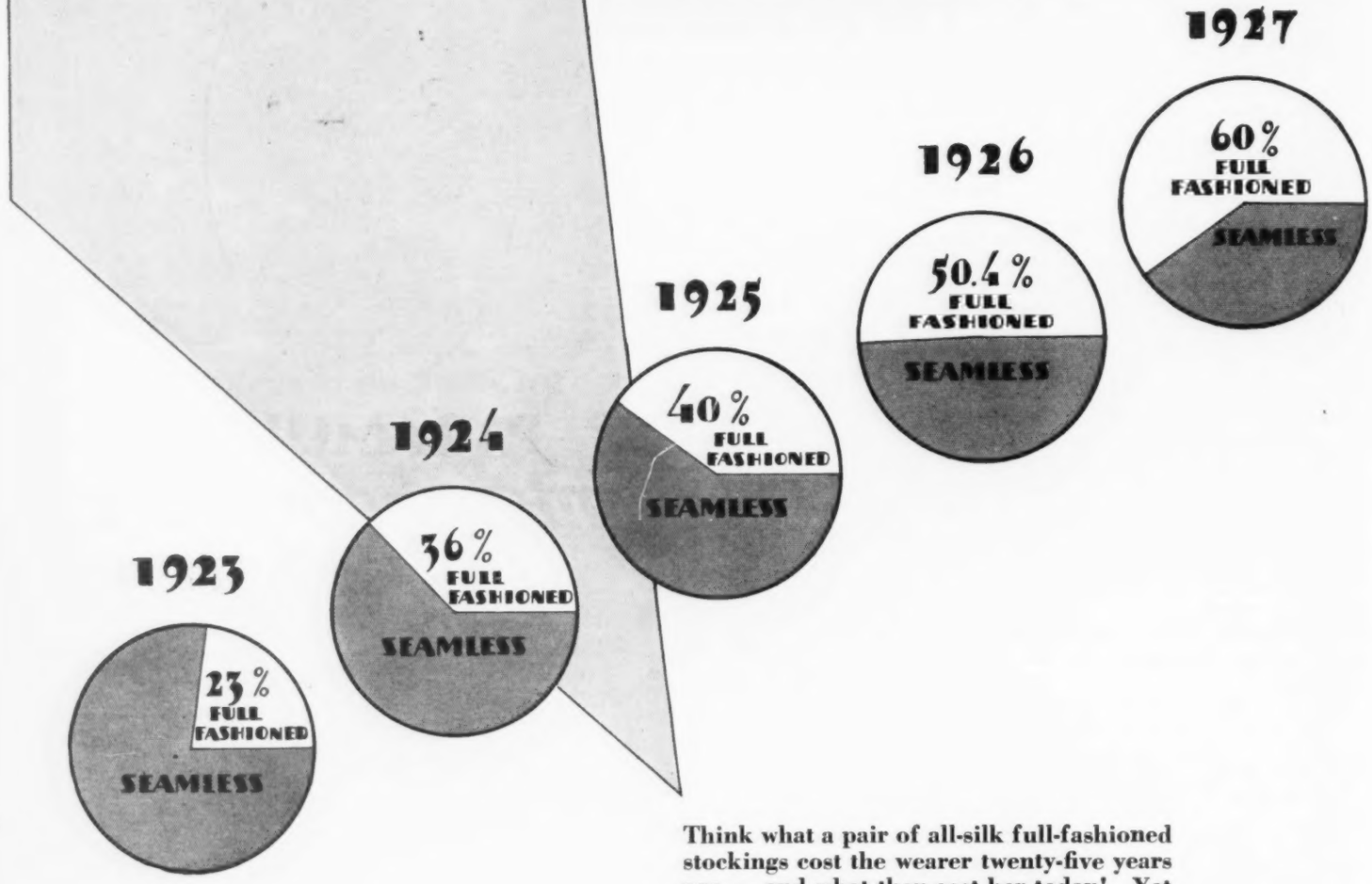
A precise heating arrangement delivers steam directly at the toe and assures proper heat at all times.

The superiority of Paramount Forms for hosiery drying and finishing is proved by the fact that the number of mills using them exceed, by a large percentage, the combined total of mills using all other methods.

See also CONSOLIDATED TEXTILE CATALOG

Paramount Textile Machinery Co.
337 W. Madison St., Chicago, Ill.

THE RESULTS OF QUALITY PRODUCTION ON AN ECONOMICAL BASIS



Think what a pair of all-silk full-fashioned stockings cost the wearer twenty-five years ago — and what they cost her today! Yet the manufacturer pays more for his silk this year than he did in 1903.

What's the answer? Machines!

Machines capable of turning out merchandise of uniform high quality day after day, year after year, without interruption.

Machines whose low operation and maintenance costs yield the greatest possible revenue from a very small margin of profit.

Quality production on an economical basis!

TEXTILE MACHINE WORKS
READING, PA.

See also CONSOLIDATED TEXTILE CATALOG

READING
FULL-FASHIONED KNITTING MACHINES

FABRICS

Advance in Woolens Gradual

More Interest in Duplicates Evidenced by Many Clothiers

THE much advertised forthcoming advance in the wool goods trade is slow in materializing. It is however gradually coming into effect through the day by day action of scattered houses. The causes behind the necessity of a rise become more definite as time goes on, and the chance for avoidance of such a change grows constantly more hopeless. Particularly in fabrics made from the medium and coarser wools is the condition critical. For example, in the last 12 months Ohio delaine and half blood rose only 9%, while in the same period the jump in Ohio three-eighths and quarter blood has amounted to 18%. In staple territory wools, fine has risen 6% and the quarter blood has gone up 17%. The advance in tops is closely parallel to this rise in wool. It must be obvious after a consideration of the figures, that there are any number of lines of wool goods which are out of line with replacement costs. Even the advances of around 5c noted during recent weeks seems barely enough to do more than touch an average cost and when the time comes that goods must be priced fully on new clip wools, further advances will be in order.

Beginning last week there was more evidence of interest on the part of buyers in the general line of primary market offerings. This is the result of two influences. First the effect of prospective higher prices is beginning to make itself felt. Buyers are coming gradually to the realization that delay of ordering, as a bit of bearish tactics, is likely to react to their disadvantage, and that well assured needs might as well be covered now since nothing is evident in the picture as likely to be gained by waiting. The second influence is the road work which clothiers' salesmen are doing among retailers for the fall, 1928, season. Many lines of garments for that season have been opened now for several weeks and their makers have a little more definite idea than they had before, as to the lines along which retailers' tastes are going to run for the coming heavy weight season.

* * *

Fall Colors: Ups and downs of color prospect for the fall, 1928, season manage to keep most selling agents guessing. When the season was first started there was evidence that those who had not included a goodly variety of the darker shades in their showings were going to lose orders. Then after a wave of enthusiasm for the darker tones, there came a time of reaction and an ascendancy of the belief that color tones would be about the same next fall as in recent fall seasons. Now comes a return to the first conception on the part of some authorities, and the darker shades on the whole are said to be gaining in heavy weights. The time when one color could swing the market seems to have passed and variety is the keynote, with most men seeking new versions of the colors they themselves prefer, whether they be blue, brown, gray or green.

* * *

Overcoatings: There has been some increment to the business on overcoatings for fall. Much of this is said to have centered in the California weight fabrics. These goods are thought likely to cut into the bulk of the heavier weight fabrics sold, rather than into the sale of topcoatings. The use of closed cars, many of them heated in cold weather, has reduced the need for heavy coats in many of the country's metropolitan districts. The need for the top coat, particularly in water-proofed versions, persists as it may be worn through the mild weather up to summer.

* * *

Women's Wear: A number of suede fabrics offered in Dept. 4 of the American Woolen Co. were advanced in price this week. Women's wear fabric buyers have not broadened out, but certain classes of goods are becoming more readily salable. The broadcloth has suffered from price cutting on stock goods, but authorities believe it will recover and be a good seller next fall. Kasha-like goods are moving and a number of the sheer fabrics for women's wear, such as wool georgette crepes, are attracting attention for nearby use. It is still in prospect for the market that wool goods will improve considerably before many months pass. Printed types of sheer goods appear as successful competitors against silks or cottons for many uses.

Klumac Cotton Mills Appoints Selling Agents

The Klumac Cotton Mills, Salisbury, N. C., makers of damask and rayon bedspreads and table cloths, have appointed Tatum, Pinkham & Greey, of New York city, their sole selling agents.

Cotton Rise Disturbs Goods

Buyers Are Not Anxious to Follow Advance in Fabrics

THE sharp advance in raw cotton given traders in cotton cloths something to think about. The gradually accumulating strength of the raw material culminated in a pronounced upturn late last week and early this week. The effect on the goods market has been unsettling. Prices have been advanced or withdrawn on many lines, but buying operations have not increased in proportion to the change in market tone. Many sellers are of the opinion that they cannot for the time being get prices from their customers which would repay raw material and manufacturing costs. These are the firms which have withdrawn prices until the market settles again on a basis which looks as though it might hold for more than a day or two.

It is quite obvious that the new strength in cotton has not been derived from the outlook for enlarged consumption but rather from the supply side, since the unfavorable weather in the South puts a shadow of considerable uncertainty on the final crop outturn. Buyers as a whole are not trying to plunge on goods, since they still show no great trust in the market. They would rather pay higher prices later on, than contract for goods today with a considerable range of fluctuation possible for the market in the future before some of these goods might enter into consumption.

Retail distribution of seasonable merchandise has been slowed up by the rainy weather of the last week or so, and warm fair days are necessary if the trade is to catch up with the volume of sales which were counted upon for this point in the season. If the trade can work out of this setback, the retail distribution of yard goods would be such as to encourage the market. The offering of fabrics for fall, such as prints, ginghams, etc., which are in progress or about to be made, face a rather apathetic market. Whether the strength of the raw material may have a buoyant effect on the spirit of buyers remains to be seen. Sellers are apprehensive that prices commensurate with replacement costs may check market development. A period of profitless prices may lie ahead unless production can be further restrained to meet buyers' gradual absorption of goods.

* * *

Ginghams: The naming of prices for ginghams for fall has been delayed. It is now said that figures will be announced in about 10 days. Makers have been upset by encountering the rise in raw cotton and the hopes entertained by them that it might be possible to avoid an advance do not seem likely of fulfillment. Rather the problem is the extent of the advance which will be made necessary for deliveries in the third quarter of the year.

* * *

Duck: Even before raw cotton started sharply upward duck had shown evidence of strength which was a change from the weakness which had held this branch of the market for some time. Several makers this week withdrew prices because of the embarrassment which rapidly changing cotton prices might bring to the mills.

* * *

Prints: These goods are slipping into a between-seasons situation. Makers are not sold ahead so far as they were several months back, nor has it appeared easy to draw out interest in fall goods. In theory the fall season will be a good print season but orders are still to materialize on the primary market.

* * *

Print Cloths: A nervous but strong print cloth market has followed the raw cotton advance. Buyers as a whole were loath to follow the rise but last week before the change was so pronounced a considerable business was done. On Wednesday of this week 8c was the low figure on 64 x 60s while just a week previous 7 5/8c had been possible. Most mills are asking 8 1/4c. Because of the gyrations of cotton business has been possible only through constant wiring to mills. A price has been good for only a short time. Bids from many buyers have been rejected. The general line of print cloths is up 1/4 to 1/2c for the

Cotton Goods Quotations

	May 2	April 25	May 4, 1927
Spot cotton, N.Y....	22.00¢	21.30¢	15.30¢
Print Cloths			
27- in., 64x60, 7.60..	5 1/2-6¢	5 1/2-6¢	5¢
38 1/2-in., 64x60, 5.35..	8-8 1/4¢	7 7/8-7 1/2¢	6 7/8-7 1/4¢
39- in., 68x72, 4.75..	9-9 1/4¢	8 3/4¢	7 3/4-8 1/4¢
39- in., 72x76, 4.25..	10 1/4¢	9 3/4-9 7/8¢	8 7/8-9¢
39- in., 80x80, 4.00..	11 1/4¢	11¢	9 7/8-10¢
Brown Sheetings			
36- in., 56x60, 4.00..	9-9 1/4¢	8 3/4-9¢	7 1/2-8¢
36- in., 48x48, 3.00..	11¢	10 3/4-10 3/4¢	9 3/4¢
37- in., 48x48, 4.00..	8 1/2-8 3/4¢	8¢	7 3/4-7 1/2¢
Pajama Checks			
36 1/2-in., 72x80, 4.70..	9 3/4-9 1/2¢	9-9 1/2¢	7 3/4-7 3/4¢
36 1/2-in., 64x70, 5.75..	7 3/4-7 1/2¢	7 1/4¢	6 3/4-6 1/2¢
Miscellaneous			
Drills, 37-in., 3 yd...	11¢	11¢	10¢
Denims, 2.30s.....	18 1/2-19¢	18¢	14 1/2¢
Tickings, 8 oz.....	21 1/2-22 1/2¢	21-22 1/2¢	18-19 1/2¢
Standard prints.....	9¢	9¢	8¢
Eastern Staple gingham, 27-in.....	10 1/2¢	10 1/2¢	9¢

THE TEXTILE DEVELOPMENT CO.

SIDNEY S. PAINE, President

CONSULTING ENGINEERS ON COTTON MANUFACTURING

Renders two major services for Textile Manufacturers

FIRST — Through the "Survey" it gives a complete story of existing mechanical and labor conditions, and mill layout; outlines the program for necessary expenditures over a period of years; plans the most improved labor organizations; and gives in detail the possible mechanical and labor savings with corrected machine conditions and

SECOND — through the follow up service by our efficient and practically trained men we supervise the carrying out of the economies indicated in the survey.

80 FEDERAL STREET

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Fabrics—Continued

week. The rise has however restricted business. Stability, which buyers didn't seem to appreciate when they had it through March and April, is now referred to by them as essential to bring back confidence. It is the consensus of opinion that mills have few orders on their books for delivery beyond June and buyers are similarly poorly covered ahead. Though buyers might delay for a week or two it is believed that after that they must be constantly in the market if only for small quantities at a time.

More Printed Silks Move

Sheer Plain Goods Do Fairly Well —But Otherwise Market Is Dull

TRENDS in broadsilks that have been developing in recent weeks became more accentuated last week, the unfortunate part of this being that these trends are uniformly unfavorable as far as the silk manufacturer is concerned. All during the spring, competition of a difficult nature has been experienced, but of late the decrease in demand, as the season ended, has resulted in still sharper competition. During April the new business that developed in georgettes for the summer season has held the worst in check. This in addition to the forward business that was being placed in satins and certain other fall fabrics made a fair showing particularly with most houses ending the print season in good shape.

Recently however in the face of a strong raw market, underselling in most of the staple fabrics has been noted. The fact that the raw markets have showed such unexpected strength, places the silk manufacturer in a still more difficult position. The advance in raw silk has not been an unmixed blessing, for to continue manufacturing would mean paying more for raw materials than can be got out of merchandise just now. The recent rise leaves a majority somewhat at loss to explain it. The answer is that so heavy has been the use of silk that it leaves the market in a technically strong position, but the heavy consumption through the first nine months at the same time leaves the fabric markets over-produced.

* * *

Georgettes: Demand continues fairly large but prices rule lower. Gray goods show somewhat greater strength than finished goods but the spread between the two is not expected to continue much longer. Prices have been affected by the large quantities of low priced China raws being used.

* * *

Satins: Prices rule fairly firm and mills are making up rather large quantities of goods. Outlook is considered good although most of the forward business is being placed in gray goods.

* * *

Crepe-de-Chines: Demand smaller and prices are closer. Certain mills are curtailing as raw costs cannot be obtained.

* * *

Radiums: Very dull and being consistently undersold. Prices unsatisfactory.

* * *

Velvets: Mills preparing for heavy demand this fall. Forward business has been large.

* * *

Silk Situation at a Glance — PRODUCTION: Declining somewhat.
DEMAND: Smaller.
STOCKS: Increased.
RAW SILK: Prices firm; stocks smaller.
SENTIMENT: Renewed sharp competition a depressing factor.

Burlaps Hold Strong

Rising Trend with May Shipments Advancing

Quotations on burlap came in from Calcutta early in the week mostly on the firmer side, and up to 10d more was asked for May shipments, other advances figuring 5d to 6d for the months up to September and around 2d more for October-December. Translated into New York market prices these changes meant 15-point advances, few offerings coming out at 10 points up from the close of last week.

Spot and afloat goods were unchanged to 10 points more. Sales were reported of 7½s and 8s at 8.05c and 8.20c and of 10s at 9.60c. The market on the whole however was quiet.

Price on spot 8 oz. 40s was 8.25c with afloats at 8.30c and May shipments at 8.35 to 8.50c. June shipments were at 8.15c, July-September at 8.00c and October-December at 7.85c. Spot 10½ oz. 40s were at 9.85c, afloats at 9.85c, May shipments at 10.00-10.05c, June shipments at 10.05c, July-September at 10.05c and October-December at 9.60c.

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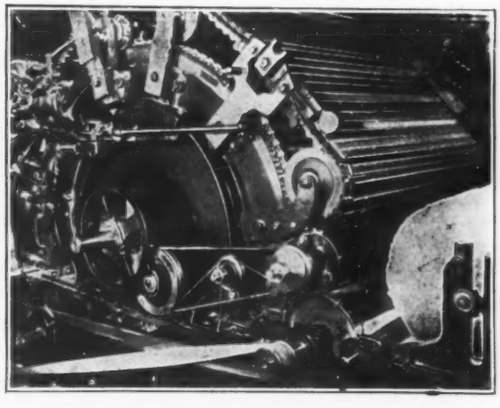

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FINANCIAL

Southern Markets Stronger

GASTONIA, N. C., April 28.—The market advanced slightly during the week in the list of common stocks of southern cotton mills. Trading was only fairly active and a number of the issues remained unchanged in price as compared with the previous week.

The average bid price of 25 of the most active stocks closed for the week at $111.04 which was a small advance over the close for the prior week according to figures as released by R. S. Dickson & Co.

The preferred issues continued in demand as has been the case for the last several weeks and a number of the issues were actively traded in with slightly higher prices.

N. Carolina Textile Stocks

(Taken from list of Southern Mill Stocks quoted by R. S. Dickson & Co., Gastonia, N. C.)

	Bid	Asked
Acme Spinning Co.	112	116
Am. Yarn & Processing Co.	105	109
Arlington Cotton Mills	...	90
Arrow Mills	...	90
Cabarrus Cotton Mills	130	135
Cabarrus Cotton Mills, 7% pfd.	109½	...
Cannon Mfg. Co. (par $10).	24	26
Chadwick-Hoskins Co. (par $25)	12	14
Chadwick-Hoskins Co., 8% pfd.	104	106
China Grove Cotton Mills	118	121
Clara Mfg. Co.	92	100
Climax Spinning Co.	105	110
Clover Mills	...	65
Crescent Spinning Co.	100	105
Dixon Mills	104	110
Durham Hosiery, 7% pfd.	43	47
Durham Hosiery "B"	5	7
Eastern Mfg. Co.	...	55
Erwin Cotton Mills Co.	114	...
Erwin Cotton Mills Co., 6% pfd.	104	106
Gibson Mfg. Co.	135	...
Globe Yarn Mills (N. C.)	52	...
Gray Mfg. Co.	...	84
Hanes, P. H. Knitting Co.	15	18
Hanes, P. H. Ktg. Co., 7% pfd.	102	...
Henrietta, 7% pfd.	80	...
Imperial Yarn Mills	...	90
Jennings Cotton Mills	200	215
Linford Mills	110	116
Locke Cotton Mills Co.	111	118
Lola Mfg. Co.	...	58
Majestic Mfg. Co.	170	...
Mansfield Mills	114	125
Mooresville Cotton Mills	...	30
Mooresville Cotton Mills, 7% prior pfd	94	98
Myers Mill	95	...
National Yarn Mill	97	101
Parkdale Mills	...	85
Perfection Spinning Co.	103	107
Ranlo Mfg. Co.	135	150
Rhyne-Houser Mfg. Co.	99	105
Roanoke Mills, 7½% 1st pfd.	95	99
Roanoke Mills, 8% 2nd pfd.	94	99
Rosemary, 7½% pfd.	99	...
Rowan Cotton Mills Co.	90	96
Seminole Cotton Mills Co.	92	100
Sterling Spinning Co.	106	111
Stowe Spinning Co.	110	115
Victory Yarn Mills Co.	62	68
Wiscasset Mills Co.	200	...
Winget Yarn Mills Co.	62	70

Silk Stocks on N. Y. Exchange

(Week ending May 1)

1928 High	Low	Stock	Sales	High	Low	Last
20	18½	Belding Heminway	2,100	19⅝	18¾	19
17⅝	11½	Century Ribbon	4,600	13½	12	13½
70½	62⅝	Julius Kayser	12,700	75⅝	73	74
25⅝	16	H. R. Mallinson	3,600	25⅞	24½	24⅞
13	7⅝	Van Raalte	...	..	..	..

Rayon Stocks on N. Y. Curb

(Week ending May 1)

Stock	Sales	High	Low	Last
Celanese Corp.	5,400	91-1/9	88½	90⅞
Courtaulds, Ltd.	200	42½	42½	42½
Industrial Rayon	18,400	24⅝	23⅛	23⅛
Tubize Art Silk	1,150	623	598	600

Textile Shares Slow But Firm

Decreased Activity in Amoskeag Common —Durham Hosiery to Shrink Capital

BOSTON, May 2.

WITH the exception of such shares listed on the local exchange as Amoskeag common, Pacific and Bigelow-Hartford common there is very little reflection in this class of securities of the continued activity on the big exchanges in other classes of stocks. Private trading is decidedly slow, and at today's auctions there was little evidence of activity excepting in Pepperell, Ludlow, Nashua, pfd., and Arlington, and all of these stocks sold at declines excepting Ludlow, which advanced 2¾ points to 201¼. A total of 294 shares of Pepperell was sold at from 95½ to 96, or a decline of 3½ points, and even a small block of Naumkeag declined ⅝ points to 153⅝. The declines in the other two issues noted were only one to 1½ points, but demand for these and other stocks was far from active.

The recent active spurt in Amoskeag common apparently ran its course at the end of the last week, when the stock touched a high of 27; this week there has been evidence of realizing sales which carried the stock as low as 24, recovering at the close today to 24¾, or a net decline for the week of ⅞ point. There has been a fair demand for Amoskeag bonds within a range of 93 to 93⅞, closing today at 93½, or unchanged for the week. The American Woolen issues have been in fair demand, but with little net change in price; the common at 22⅜ is up ⅜ points, and the preferred at 53⅞ off ⅝ points. Pacific at 32 is unchanged for the week, although in the interim it sold as high as 33¼. Bigelow-Hartford common at 91 is off 1 point for the week, the range having been from 91 to 92½.

Standard Textile Products

The Standard Textile Products Co., which operates the Meritas group of cotton mills in the South, shows by its report for the quarter ended April 2 that it is fully maintaining its recent improved earning record. Net sales for the quarter were $3,700,650, as compared with $3,433,804 for the same period of 1927, while the net before charges was $505,021 this year, as compared with $397,675 the same period of last year. The net after all charges for the quarter just ended was $191,133, and compares with $151,724 for the same period of last year, but the latter was the net before deduction of Federal taxes.

Durham Hosiery Refinancing

The recapitalization plan for the Durham (N. C.) Hosiery Mills, submitted to stockholders by a committee appointed for that purpose and to be acted upon May 8, provides for a drastic reduction in the outstanding stock of the company. It provides for the issuance of 21,821 shares of 6% first preferred stock of $100 par, to be exchanged for the present outstanding 29,100 shares of preferred on the basis of three new shares for each four held; one share of class B common stock will also be given with each share of new preferred. In addition to the 6% annual rate on the preferred, that stock will carry dividends up to a maximum of 50c a share if dividends up to or exceeding that amount are paid on the common. For the 7,043 shares of no par Class A common stock there will be issued 56.35% of one new share for each share now held, and for the 21,131 shares of no par Class B common stock there will be issued 56.35% for each two shares now held. The Class A and Class B common stocks will share alike in dividends. The total par value of stock at present outstanding is $7,910,000. The last financial statement of the company showed assets of $6,527,836 and liabilities of $2,829,929, with an apparent net of $3,697,906. Abnormal conditions in the trade have caused a considerable depreciation in the company's assets, and much of its equipment is obsolescent as a result of the changed character of demand. It is pointed out by the refinancing committee that if all assets were written down to their real worth, and the stock structure not readjusted there would be a deficit in the balance sheet.

Mercury Mills, Ltd., Bonds

Public offering is being made by Wood, Gundy & Co., Ltd., of an issue of $1,500,000 Mercury Mills, Ltd. first mortgage sinking fund gold bonds, 5½% series "A," at 99 and interest, yielding over 5.57 %. Mercury Mills, Ltd., is one of the foremost Canadian manufacturers of knitted goods, and operates two plants, one at Hamilton, and one at Woodstock, Ont. The latter was acquired this year, and due to unified control of the two businesses, it is expected that substantial economies will be effected in this branch of the business. The company has been in continuous operation for more than 15 years. Earnings during the last seven years are shown to have varied between $264,315 and $341,188 a year, as against annual bond interest requirements of $82,500. Combined fixed and net current assets are over 2¾ times the amount of bond issue. Upon completion of present financing the capitalization of the company will be as follows: First mortgage bonds, authorized $3,000,000, outstanding $1,500,000; 6% cumulative preferred shares, authorized $2,000,000, outstanding $1,000,000; common shares, no-par-value, authorized and outstanding 45,000 shares. The proceeds of the bond issue will be used for the retirement of $736,000 first mortgage bonds heretofore outstanding, to reimburse the company for recent capital expenditures and to further strengthen the company's working capital position.

Boston Stock Auctions

The following sales of textile shares were made at Wednesday's auctions:

Shrs.	Mill	Par	Price	Change
8	Naumkeag	100	153⅜	—⅜
21	Ludlow	100	201¼-200	+3¾
294	Pepperell	100	95½-96	—3½
24	Androscoggin	100	70⅝-73	+2
89	Nashua, pfd.	100	94⅞-95½	—1½
6	Everett	100	9	+2½
10	Thorndike	100	50c	.....
12	Great Falls	100	6½	+½
16	Chace	100	2	.....
20	Union Mills	100	21	—16
10	Lancaster, pfd.	100	17⅛	—⅞
35	Arlington	100	40	—1
23	Plymouth Cordage	100	78½-76	—4
50	Nat'l Fab. & Fin. com.	100	32	—⅛
2	Asbestos Textile, 1st pfd.	100	$12 lot	.....
600	Total.			

Textile Industry the Safest According to Secretary Fisher of N. A. C. M.

BOSTON, April 30—"Mechanical guards on machinery, safety campaigns within the mills and the cooperation of the employes have made the textile industry the safest of the 17 major industries of this country," Secretary Russell T. Fisher of the National Association of Cotton Manufacturers told the Massachusetts Safety Council Conference in the Hotel Statler here this morning.

"No one likes to see a man crippled or injured in any way and safety work has a great humanitarian appeal. The textile industry is therefore proud of its record of only 31.48 accidents of any kind per 1,000 workers. These figures were compiled by the National Industrial Conference Board and I am quite sure that the record will grow better with each year.

Trade in Accident Prevention

"Latest available statistics show that the textile industry, is retaining its position as a leader in accident prevention work. Accident reports for 1925 and 1926 show the industry to have had the fewest deaths, but nine per 100,000 employes in 1926; the fewest number of total accidents and the fewest number causing temporary disabilities. Thus far this year many of the mills have operated two and three consecutive months without a single loss time accident.

"The fact that conditions in the mills have changed in the last 25 to 50

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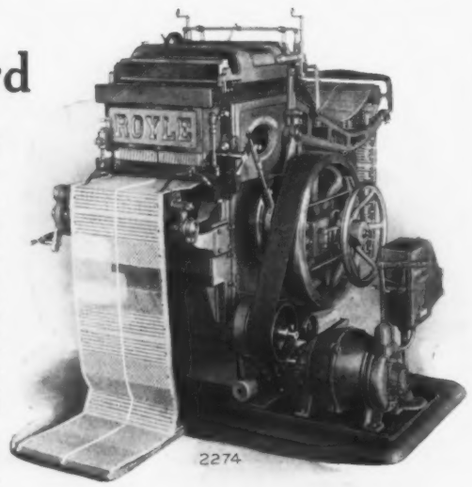

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Financial—Continued

years seems to be entirely overlooked from time to time by some critics. The textile industry was one of the first to expand from a household to a factory industry. Naturally, our early mills seem primitive in comparison with modern buildings, but at the time they were built, they were as representative of good building practice as this hotel is today.

"The history of the application of gas and electricity shows that the textile industry was always ready to adopt these developments as they became available. In fact, many of the new standard practices in the electrical field are based on the early experiences obtained in textile plants. Arc lights were used as early as 1879, incandescent lamps in 1881, individual motor drive in 1891 and the first mill to be driven entirely by electricity in 1893.

"In other words conditions in the early textile mills were due to lack of modern facilities and inventions and not to anything peculiar to the industry.

Non-Mechanical Causes Largest

"An analysis of lost time from accidents in the textile industry, made by insurance companies, shows that 34.05% of all accidents in cotton mills are due to mechanical causes and that 65.95% to non-mechanical causes. In the woolen industry accidents due to mechanical causes are a little higher, 38.97% and to non-mechanical causes, 61.03%.

"Of the 34.05% of accidents in a cotton mill due to mechanical causes 28.71% were caused in the operation of cotton manufacturing machinery, the balance 5.43% were caused by the operation of incidental woodworking and machine shop tools, etc. In the woolen industry approximately the same conditions are found with 33.17% of the accidents due to the operation of woolen manufacturing machinery and 5.80% due to incidental machines.

"More than half of the non-mechanical accidents are due to falls and mishaps during the handling of material. These types of accidents amounts to 43.22% of the 65.95% of the total accidents in the cotton industry and 49.46% out of the 61.03% in the woolen industry. The prevention of this type of accident presents a serious and difficult problem as it is frequently difficult to assign the real cause.

"Infection is one of the most troublesome of the handling materials accidents in the cotton industry, 14.43% of the total lost time accidents were due to this cause in 1926. It seems to be human nature to ignore small cuts, scratches or bruises. The employe may have a small bruise, cut or scratch, if it does not trouble him at the time he forgets it. The next day it may be infected and the trouble has started."

Lonsdale Co., Ashton, R. I., which has been on a 3 day a week schedule since November, is now operating on a 54-hour per week basis.

New England Textile Stocks

(Quotations at "Public Sale" are based upon last sales at Boston public auction and Boston Stock Exchange. Bid and Asked prices are latest quotations of leading Boston dealers.)

	Public Sale	Bid	Asked
Am. Mfg. pfd.	82	72	77
Am. Wool pfd.	53⅞	...	...
Amoskeag, new	24¾	...	...
Androscoggin	73	70	75
Arlington	40	38	41
Bates	110⅛	108	112
Berkshire Cot	131	125	130
Bigelow-Htfd. com.	91	...	...
Boott	122⅞	120	...
Edwards	70	85	...
Esmond, pfd.	101	100	...
Farr Alpaca	138¼	...	125
Great Falls	6½	5	8
Hamilton Woolen	21	19	23
Hill	17	17	18
Ipswich, pfd.	15	12	16
Ipswich, com.	2½	2	5
Lawrence	67⅞	67	69
Ludlow Asso	200	195	199
Merrimack, com.	145	154	...
Nashua, Com.	55	50	55
Nashua, pfd.	95½	92	95
Naumkeag	153⅝	150	155
N. E. So. pfd.	4	...	...
Otis	38	31	36
Pacific	32	...	...
Pepperell	96	99	101
Plymouth Cordage	76	78	80
York	24	25	27

Fall River Mills Stocks

(Quotations furnished by G. M. Haffords & Co.)

	Bid	Asked
Algonquin Printing Co.	320	...
American Linen Co.	...	1
Arkwright Mills	...	12
Barnard Mfg. Co.	...	30
Borden Mfg. Co., Richard	10	...
Border City Mfg. Co.	15	20
Bourne Mills Co.	...	65
Chase Mills	1½	5
Charlton Mills	...	100
Cornell Mills	...	55
Davis Mills	...	47
Davol Mills	12	...
Flint Mills	52	65
Granite Mills new (com.)	15	20
King Philip Mills	127	133
Laurel Lake Mills (com.)	5	10
Laurel Lake Mills (pfd.)	...	...
Lincoln Mfg. Co.	...	48
Luther Mfg. Co.	...	112
Merchants Mfg. Co.	...	32
Narragansett Mills	...	30
Osborn Mills (new)	76c	...
Parker Mills (com.)	5	...
Pilgrim Mills	...	135
Sagamore Mfg. Co.	...	103
Shove Mills	10	15
Stafford Mills	...	10
Stevens Mfg. Co.	...	97
Troy C. & W. Mfg.	...	75
Union Cotton Mfg. Co.	...	60
Wampanoag Mills	...	20
Weetamoe Mills	...	10

New Hemp Plant

Imperial Linen Products Co. Start First Unit in San Diego, Cal.

The decorticating plant of the Imperial Linen Products Co., a $3,000,000 corporation of San Diego, Cal., owning hemp acreage in the Imperial Valley and in Arizona, and having a plant for the preparation and manufacture of its hemp into rope, binder twines, carpets and wall board, was started at Chula Vista, April 24, with dedicatory exercises. The company's first plant unit, located on a 50 acre tract, is a concrete and steel building 1000 ft. long and 45 ft. wide, constructed at a cost of $400,000.

The hemp treating and decorticating machinery with which the first unit is equipped were designed by Karl Wessel, vice president and general manager of the company, and formerly general manager of the Klearflax Linen Looms, Duluth, Minn. The plant is equipped with one 100-ton decorticator and will employ 100 men at the start, but the

Financial—Continued

plans call for the eventual installation of three more decorticators. The officers of the company in addition to Mr. Wessel are Alfred Stahel, Jr., president; J. H. Zitt, treasurer; and E. K. Cormack, secretary.

Business News

Drew to Represent Engineering Firms on Coast

E. G. Drew, for many years connected with the J. O. Ross Engineering Corp., and with the John Waldron Corp., has opened an office at 303 Lumbermen's Building, Portland, Ore. He will represent the J. O. Ross Engineering Corp., which specializes in paper mill heating and ventilating systems, waste heat recovery, Ross-Wagner furnaces, as well as air-conditioning for the paper and printing trades.

Other concerns to be represented by Mr. Drew are: John Waldron Corp., manufacturer of paper converting machinery; Smith & Serrell on Francke couplings; and Nichols Products Corp., which manufactures and installs Nichols-McCann-Harrison high temperature heaters, baking and drying ovens, and paint spray booths.

Consolidated Products Co. Moves to Larger Quarters

The Consolidated Products Co., specialists in used chemical machinery, have outgrown their present quarters on the 14th floor and are moving to an entire wing of the 16th floor of 15 Park Row, New York City, where twice the office facilities will enable them to handle their increased business.

In 1927, this company found it necessary to increase the facilities of their machine shop at their plant at Newark, N. J. This followed from the adoption of a policy of overhauling and rebuilding every item of machinery before shipment, bringing a higher standard of quality in the used chemical machinery field and resulting in increasing confidence by their customers and a definite assurance of repeat orders.

Receives Unique Souvenir

E. O. Spindler, 139 Franklin Street, New York, the American representative of Edouard Dubied & Cie, Switzerland, was recently presented with a unique souvenir by the Mexican representative of the Dubied concern, Senor De La Pensa, as a token of his regard and appreciation of personal services rendered. This was a handsome signet ring, made of Mexican gold and enamel. It was made by a Mexican artist and shows the Dubied trademark in gold, of a woman making sweaters on a Dubied machine. The design was executed in a striking manner in white and red enamel.

Moncton, N. B., Canada. Gundry, Pymore, Ltd., of London, Eng., manufacturers of twine and rope, etc., have awarded a contract for the initial warehouse building of their Canadian plant, which they have decided to locate in Moncton.

Prizes for Better Staple Grown in South Carolina

SPARTANBURG, S. C.—Considerable interest is manifested by the cotton farmers throughout the State in the five-acre cotton contest, promoted by the South Carolina Cotton Manufacturers Association, with the end in view to have the State's farmers produce a staple of more length, stronger fiber and finer quality, adapted to the mill machinery of the State. A total of $2,000 in cash prizes is provided by the manufacturers' association. The State is divided into three districts. Spartanburg county farmers to the number of 20 will enter this contest. Last year a normal cotton yield was realized in this county—63,000 bales—due to good weather conditions and the absence of insect infestation.

Bemis Bros. Plan for Future Expansion

Bemis Bros. Bag Co., which is one of the largest bag manufacturers in the country operating cotton mills in St. Louis, Mo.; Bemis, Tenn.; and Indianapolis, Ind., has secured an option on 1,300 acres of land in Talladega, Ala., and is having it surveyed preliminary to purchase. If the land is acquired it is understood to be the plan of the company eventually to erect on it several cotton mill units, the first of which would contain from 30 to 36 thousand spindles. While these facts are confirmed by an official of the Bemis Bros. Bag Co. at their home office in Boston, together with the fact that J. E. Sirrine & Co., Greenville, S. C., are the engineers, they are not prepared at the present time to make any further statements.

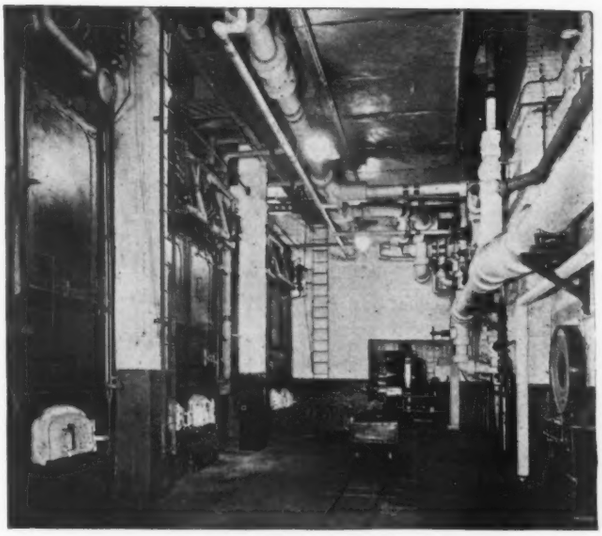
Textile Exhibits to Be Included in Pacific Southwest Exposition

LONG BEACH, CAL.—Already the textile industry has signed up for space in the forthcoming Pacific Southwest Exposition to be held in Long Beach July 27 to Aug. 31. Seventeen textile and textile products manufacturers to date have signed for exhibit space. There will be eleven buildings erected on a 60-acre site for the exposition, which will feature the products of the Pacific Southwest and the States bordering it, as well as the nations of the Pacific and several European countries.

Increase in Vacations-with-Pay for Workers

WASHINGTON, D. C.—Increased attention being paid by manufacturers to maintenance of a healthy working force and increase in number of plants giving vacation with pay to workers, are noted in a bulletin just published by the Bureau of Labor Statistics Department of Labor.

Bigelow Hartford Carpet Co., Clinton, Mass. Carding and spinning departments of this mill are reported to be operating on a curtailed schedule. All other departments are on full time.



This boiler room, situated in the basement of a building, supplies steam to a large manufacturing plant located in a metropolitan city. The original equipment included two 229 H.P. boilers which were set low and about six feet further into the firing aisle than shown. A new 350 H.P. boiler was added and the old boilers were raised to provide more combustion space. A new smoke flue, forced draft flue, balanced draft system, new piping and pneumatic ash conveyor were also installed.

POWER PLANT IMPROVEMENTS

The ability to accomplish such changes in the boiler room of this and other manufacturing establishments without interference with continuous night and day operation, is convincing evidence of the engineering service we render to industrial plants.

Reports Plans Supervision of Construction

CHAS. T. MAIN, INC.

ENGINEERS

BOSTON, MASS. **201 Devonshire Street**

Repeat Orders Mean Satisfied Customers

STANDARDIZE on LENOIR YARNS

HUDSON
CALDWELL
LENOIR
MOORE
NELSON
WHITNEL

CORRECT

COTTON
PUT UP
YARDAGE
STRENGTH
TWIST
REGULAR
REVERSE

TWENTIES to SEVENTIES — COMBED and KARDED

PAULSON, LINKROUM & CO.
INC.
52 Leonard Street, N. Y.
AGENTS
Mills at Lenoir, N. C.

J. H. SEPARK, Sec'y and Treas. — J. L. GRAY, Vice-Pres. and Gen. Mgr.

Arlington Cotton Mills
Parkdale Mills, Inc.
Arrow Mills, Inc.
Myrtle Mills, Inc.
Arkray Mills, Inc.
Gray Manufacturing Co.
Flint Manufacturing Co.
Gastonia, North Carolina

Spinners of Fine

Cotton Yarns

Gassed and Ungassed
Combed Peeler
Double Carded Peeler
in sizes
26s to 120s — single and ply for
CONVERTING — KNITTING — WEAVING and ELECTRICAL USAGE
and 24s to 100s — 2, 3, and 4 ply for
THREAD PURPOSES

H. A. Florsheim

General Sales Manager
225 Fifth Ave., New York City
Branches
Boston Gastonia Philadelphia Chicago

Johnston Mills Company

"Direct to Consumer"

MERCERIZED YARNS

SINGLES—product of The Elmore Co.
PLY—product of Spinners Processing Co.

These yarns recognized for strength, evenness and lustre, possess knitting and finishing qualities unsurpassed. Complete warehouse stocks carried in leading Textile Centres for quick delivery.

COMBED AND CARDED YARNS

Full range of numbers produced by our own mills from that character of cotton, exactness of twist and count, excellence of workmanship and winding, that insure minimum trouble and maximum production for the knitter and weaver.

SALES OFFICES:

NEW YORK: 93 Worth St.
CHATTANOOGA: 805 James Bldg.
CHICAGO: 688 Adams Franklin Bldg.
PHILADELPHIA: Public Ledger Bldg.
CHARLOTTE: Johnston Bldg.
READING, PA.: 207 Berk Co. Trust Bldg.

Forrest Mercerizing Co.

MERCERIZERS SINCE 1895

30/1
40/1
50/1
60/1
70/1
80/1
90/1
100/1
90/2
100/2
120/2
140/2

Specialists in

Super Quality
Plaiting and Splicing Yarns

FORREST MERCERIZING CO. GLOUCESTER, N.J.

(Reg. U. S. Pat. Off.)

Tinted Yarns

Licensed under the Wilcox Patent No. 1,496,696

"It floats off the cone"
Try a Sample Case—Increases Production

Sales Office: FORREST BROTHERS
Forrest Bldg., 119 So. 4th St., Philadelphia

COTTON YARNS

Represents Mauney-Steel Co. in New York Territory

R. H. Styles has become associated with Mauney-Steel Co., Philadelphia, and will represent them in the New York market. He will make his headquarters at their offices, 87 Leonard St., New York City. Mr. Styles is widely known in the trade, having been previously connected with G. S. Lings & Co., Inc., for more than 15 years.

Agent for Peck Mfg. Co.

Wm. H. Moeller, Inc., 93 Worth St., has been appointed selling agent for the Peck Mfg. Co., Warrenton, N. C., in all markets with the exception of Pennsylvania. This mill, of which L. C. Kinsey, formerly of the Harriet Cotton Mills, Henderson, N. C., is superintendent makes a specialty of weaving yarns, single and ply.

Joins Waterman, Currier & Co.

S. D. Terry, formerly connected with the cotton yarn department of the Wm. Whitman Co. has become associated with Waterman, Currier & Co. and is connected with the New York office of the firm at 40 Worth St.

Possibilities Affect Yarn Trade

Developments May Cause Decided Change in Selling Markets

New York.

AN air of tenseness as well as of expectancy seems to permeate the cotton yarn market. Various causes may be ascribed for this feeling, among which are the imminence of some announcement with regard to the Flint merger; the discussion of the continuance of the Code of Practices or its possible modification and the radical upward move in cotton with the necessity for raising the level of yarn prices, to which may be added the difficulty of securing the advances once they are named. All of these elements have a more or less disturbing influence upon the situation and yarn houses are apparently waiting to see what is going to happen.

Possible Developments

At this writing no definite announcement has been made regarding the consummation of the Flint merger. All sorts of rumors are afloat; some to the effect that the proposition as presented to the bankers has not been satisfactory and they have turned it down. Others have expressed the belief that with the passage of the first of May, at which time it was believed a good many options on spinning mills expired, and without some definite word as to the completion of the combination, all bets are off. It is unsafe to make predictions one way or the other until something definite comes from the proponents of the plant and this so far has not been received.

With regard to discussion on the Code of Practices as a result of a meeting held this week, announcement of which will be noted in another column, all sorts of opinions exist and are expressed. The proposal to allow carrying of stocks is regarded in certain quarters as defeating the underlying reason for the existence of the Code, although others believe this modification of the original plan has been made necessary by developments during the last few months. Also there is a variety of opinion respecting the feasibility of reporting certain statistics regarding the business of firms now connected with the Yarn Merchants Association. While it is agreed the idea is correct in principle a certain number are pessimistic enough to prophesy that a good many will not consent to furnish figures regarding their tonnage, even though every assurance as to the impossibility of individual situations being disclosed is given. As these suggested modifications will not take form until they are presented to and passed upon by the Carded Yarn Group of the Textile Institute, they can be regarded as matters on which decision should be held in abeyance until some definite action by the cooperating bodies is announced. This, it is believed, will not be made until after the middle of the month when more will probably be known about the possibilities of the merger and the effect of its existence or abandonment can be determined.

Influence of Advances

There is no doubt that the yarn market is on higher level. Advances of from 1½ to 2c are announced on

Cotton Yarn Quotations

Carded—(Average Quality)

Double carded weav'g and knitt'g yarn 2c to 4c higher, according to quality

Single Skeins or Tubes—(Warp Twist)

4s to 8s	—	—32	20s	35	—36
10s	32	—32½	24s	37½	—38
12s	32½	—33	26s	38½	—39
14s	33	—33½	30s	39	—40
16s	33½	—34	40s	48	—49

Two-Ply Skeins and Tubes

8s-2	—	—33	26s-2	38½	—39
10s-2	33	—33½	30s-2	—	—40
12s-2	34	—34½	36s-2	46	—47
14s-2	34½	—35	40s-2	—	—48
16s-2	35	—35½	40s-2 High Breakage	—	—53
20s-2	36	—37	50s-2	58	—59
24s-2	38	—38½	60s-2	—	—64

Single Warps

10s	—	—33½	24s	—	—38
12s	33½	—34	26s	—	—39
14s	34	—34½	30s	—	—41
16s	—	—35	40s	—	—49
20s	—	—36			

Two-Ply Warps

8s-2	—	—33	24s-2	—	—38½
10s2	33	—33½	26s-2	—	—39
12s-2	34	—34½	30s-2	40	—41
14s-2	34½	—35	40s-2 ordinary	—	—49
16s-2	35	—36	50s-2	58	—59
20s-2	36½	—37	60s-2	64	—65

8s-3 and 4-ply skeins and tubes; tinged, 30-31, white, 31-32

Hosiery Cones (Frame Spun)

8s	31½	—32	22s	35	—35½
10s	—	—32	24s	36	—36½
12s	—	—32½	26s	36½	—37
14s	—	—33	30s tying in	37½	—38
16s	—	—33½	30s regular	39	—40
18s	—	—34	30s extra quality	41½	—42½
20s	34½	—35	40s	47	—47½

Combed Peeler—(Average Quality)

Warps, Skeins and Cones

20s-2	46	—47	50s-2	59	—61
30s-2	51	—53	60s-2	65	—67
36s-2	53	—54	70s-2	75	—77
40s-2	55	—56	80s-2	85	—88

Singles

12s	40½	—41½	30s	50	—51
14s	—	—42	38s	53	—54
16s	—	—42½	40s	54	—55
18s	—	—43	50s	61	—64
20s	—	—44	60s	67	—69
24s	—	—46½	70s	76	—78
28s	—	—49½	80s	86	—88

Mercerized Cones—(Combed, Ungassed)

26s-2	63	—65	80s-2	1 09	—1 11
30s-2	64	—66			
36s-2	67	—69	**Singles**		
40s-2	69	—71	30s	—	—80
45s-2	74	—76	40s	—	—85
50s-2	76	—78	50s	—	—90
60s-2	85	—87	60s	—	—1 03
70s-2	97	—99	70s	—	—1 17
			80s	—	—1 48

Peeler—(Super Quality)

Single Cones

	Carded		Combed			Carded		Combed	
10s	35	—36	45	—47	26s	40	—41	52	—54
14s	36	—37	46	—48	30s	41	—42	54	—56
16s	36½	—37½	48	—49	36s	46	—47	57	—59
18s	37	—38	49	—50	40s	50	—52	60	—62
20s	37½	—38½	50	—51	50s	—	—	62	—64
24s	39	—40	51	—52	60s	—	—	72	—75

Combed Cones, Warps and Tubes

20s-2	50	—52	40s-2	60	—62
24s-2	52	—54	50s-2	67	—69
28s-2	53	—55	60s-2	72	—75
30s-2	54	—56	70s-2	82	—85
36s-2	57	—59	80s-2	1 00	—1 05

Combed Reverse Twist Thread Yarns—Skeins, Tubes or Cones, 2, 3, and 4-ply

	Peeler		Sakelarides	
	Average	Best	Average	Best
24s	—58	—64	92	97
30s	—61	—66	95	1 00
36s	—63	—68	97	1 01
40s	—68	—73	1 02	1 07
45s	—73	—79	1 07	1 12
50s	—78	—83	1 12	1 17
60s	—88	—93	1 22	1 28

Quotations are average prices of the counts and qualities indicated at the close of business May 2. They do not cover lower or higher qualities unless specifically noted. For New York spot cotton prices, see page 189. For staple cotton prices, see page 191.

COTTON PRODUCTS COMPANY

Bankers Trust Building, Philadelphia, Pa.

Sole Selling Agents

for

ROWAN COTTON MILLS CO.
Salisbury, N. C.
Combed Peeler Yarns
24's to 40's

A. M. SMYRE MFG. CO.
Gastonia, N. C.
Combed Peeler Yarns
50's to 80's

SOUTHERN MERCERIZING CO.
Tryon, N. C.
Single Mercerized Yarns

T.J. PORTER & SONS

CAMEL HAIR, CASHMERE
AND
ALPACA

TOPS, NOILS
AND
WASTES

119 SOUTH FOURTH STREET
PHILADELPHIA
BRANCH SALES OFFICES
NEW YORK LOS ANGELES

TUCKASEGEE SPINNING CO.

Mount Holly, N. C.

TUCKASEGEE SPINNING CO. INC. MOUNT HOLLY N. C.

38s & 40s All Plies and Description

The high and uniform quality of these yarns is a result of eternal vigilance in every step from raw material to finished yarn.

Samples and prices cheerfully furnished.

H. A. James

SELLING THE OUTPUT OF OVER 150000 COMBED YARN SPINDLES IN N.C.
GEN. SALES MGR.
450 FOURTH AVE. · NEW YORK · PHONES: ASHLAND 3930-31-32

Cotton Yarns—Continued

many counts of yarn and in certain instances even more has been named by the spinner. No one questions the warrant for such higher prices if selling levels are to be based upon replacement costs. If the gauge of the yarn market is the advance in cotton decidedly higher prices than those which have been named this week are in order. The only question is whether the buyer will feel it necessary to protect himself against further advances or whether his hand-to-mouth procedure will cause him to continue to stay out of the market except for current requirements. The test has hardly been made as yet. There is no doubt an increase in inquiry. Sales have been made at advances. They have not in all instances been on the higher level which spinners have reached in their quotations, but it is unmistakable that the buyer is convinced of the necessity for paying more on any yarns which he must have for prompt use.

Undoubtedly there is considerable resistance to the advance because there has been unquestionably a certain amount of short selling of the manufactured product, depending upon ability to secure yarn on a basis which would yield a profit. Whether the buyer is going to risk waiting for a recession from the newly established level or whether he will be sufficiently apprehensive of the future to anticipate his requirements remains to be seen. The habit of buying from hand-to-mouth has been firmly established; perhaps so firmly that the majority will take the chance of paying higher prices when yarn is absolutely needed and will run the risk of being able to deliver their product without incurring a loss. It is surprising that in view of the advance in cotton and yarn and the possibility of continued upward movement, very little advance, if any, has been registered on many lines of finished goods. It is a commentary on the unsatisfactory condition which exists with regard to the product of many yarn consumers. They feel their trade will not respond to the higher prices which are fully justified and are waiting until the last possible moment to decide whether these revisions upward are of vital necessity.

Details of Prices

On coarse yarns advances register from 1½ to 2c a pound. The small aggregate business received these days on coarse counts of single yarns attach little significance to the higher prices on these numbers. On typical counts, such as 20s and 30s-2 warps there is a decided variation in quotations. On the former 36½c may be regarded as slightly under the existing market and few spinners would quote this figure. Reports have been current that as high as 39c has been asked for this count. As long as 41c is the spinner's asking price on 30s

(*Continued on page 212*)

Prices Advance with Cotton

Little Cotton Yarn Business Due to High Asking Prices

BOSTON.—It is evident that the latest upward rush of raw cotton prices has scared spinners more than it has cotton yarn buyers, for the majority of the former have raised their asking prices to figures that most users consider prohibitive, with the result that comparatively little business has been put through and the market is practically unquotable if it is to be based as normally on average prices of average qualities of yarn based on actual sales. On medium and coarse count carded and combed yarns there is anywhere from 1 to 2c between average asking prices and average bid prices, and on finer count combed and carded yarns the variation is still wider.

The advance in mercerized yarns, effective May 1, is 3c a pound on counts coarser than 90s and 5c a pound on finer counts, and this advance is likely to strengthen combed gray yarns, although thus far the latter have not shown as much strength as carded yarns. The average advance in combed yarns up to Wednesday did not exceed 2c on counts coarser than 70s and 5c on finer counts, but asking prices since the advance in mercerized yarns have been raised by many spinners another cent or two.

Certain local dealers claim that the market on medium and coarse count weaving yarns is a basis of 39 to 40c for 20s-2 carded warps, although admitting that they can find few buyers who are willing to pay as much as 37½ to 38c, while few spinners will sell for a less than a 39c basis. For an average 20s-2 with cotton at 22c, and not allowing for a premium of around 100 points for grade and character on a ⅞ to 15/16 inch cotton, production cost is approximately 40¾ for a southern mill running night and day. This, and the fact that no large number of spinners have any considerable amount of cheap cotton, are reasons for their stronger price attitude in the face of advancing raw cotton prices. That the market averages 2c higher than minimum prices of the middle of last week is unquestioned, and it is also apparent that stocks of carded yarns held by spinners are very much smaller than the majority of users believed.

Improved Demand for Yarns in Chattanooga

CHATTANOOGA, TENN.—Greater activity is reported in the local yarn market after weeks of quiet. A leading local broker declares that during the week ending April 28 there was a pronounced improvement in the demand for yarns.

The textile business here has been slow for the last several months and the increasing demand for yarn is re-

GROVES MILLS, Inc.
SUPER QUALITY
COTTON YARNS
COMBED PEELER, 24s to 80s, single and plies
CONES, TUBES, SKEINS AND WARPS
Samples and quotations promptly furnished.
SALES OFFICE:
225 FIFTH AVENUE, NEW YORK
MILLS AT GASTONIA, N. C.

SWIFT SPINNING MILLS
Columbus, Georgia
Cotton Yarns of Quality
From Mill direct to Consumer
WM. A. P. MACKNIGHT
Sole Representative
1518 Walnut St. Philadelphia, Pa.

ROCKFISH MILLS, Inc.
DIRECT SELLING SPINNERS
COTTON YARNS OF QUALITY
10's to 40's Single and Ply
Warps, Skeins, Tubes, Cones.
Selling Offices
PHILADELPHIA, PA. 1035 Drexel Bldg. Lombard 5932
NEW YORK 456 Fourth Ave. Ashland, 4342
PROVIDENCE, R. I. 36 Exchange Place Gaspee 2218

JAMES E. MITCHELL COMPANY
Cotton and Rayon
YARNS
Philadelphia Boston

FORREST BROTHERS
Forrest Bldg., 119 S. Fourth St., Phila., Pa.
Superior Quality Knitting Yarns
Sole Representatives
Bladenboro Cotton Mills—Vass Cotton Mills
8s to 30s Extra Carded

TILLINGHAST-STILES CO.
Cotton and Worsted Yarns
PROVIDENCE, R. I.
113 Worth St., New York
Room 922, Webster Bldg., 327 So. LaSalle St., Chicago

H.S. RICH & CO.
COTTON YARNS
180-192 SOUTH WATER ST
PROVIDENCE R.I.

SOUTHERN MERCERIZING CO.
TRYON, NORTH CAROLINA

Our Specialty—
SINGLE Mercerized

Yarn for Splicing and Plaiting

Single Mercerized Yarns up to 100/1—Also Two Ply Mercerized 100/s to 140/s
Tinted yarns Licensed under Patent No. 1,496,696.

Wire or write us for prices and samples

SOUTHERN MERCERIZING CO.
TRYON, NORTH CAROLINA

Sole Selling Agents for United States and Canada
Cotton Products Company
Bankers Trust Bldg., Philadelphia, Pa.

SPINNING DEPARTMENT—HERE, SELECTED COTTON IS CONVERTED INTO YARN OF EXCEPTIONAL STRENGTH AND UNIFORMITY.

DIXIE MERCERIZING CO. STRENGTH LUSTRE QUALITY CHATTANOOGA TENN.

DIXIE YARNS MEET EVERY TEST

Spinners and Processors
NATURAL—DYED
GASSED—BLEACHED
AIR DRIED
MERCERIZED YARNS
SINGLE OR PLY
CONES—SKEINS
COPS—TUBES
PARTICULARLY ADAPTED FOR THE KNITTING AND WEAVING TRADE.

Through **Controlled Manufacture,** Dixie produces yarns of such strength and uniformity as to best meet every test and every requirement of the knitting and weaving trade.

DIXIE MERCERIZING CO.
MAIN OFFICE AND PLANTS
CHATTANOOGA, TENNESSEE

DIXIE MERCERIZED YARNS

Harriet—Henderson

Two names that are the equivalent of sterling in yarn buying. Among a host of mill men these are more than just names. They are representative of yarns whose quality is consistently high.

6s to 30s — Single and Ply
Skeins, Cones, Tubes, Ball and Chain Warps
for KNITTING and WEAVING

HARRIET COTTON MILLS
HENDERSON COTTON MILLS
Henderson, N. C.

Selling Agents
John F. Trainor Co., Inc.
17 E. 42nd St., New York
Winthrop Mincher, Troy, N. Y.
Philadelphia Office—39 S. Tenth St.

Cotton Yarns—Continued

garded as highly encouraging. Buying did not reach sensational proportions during the week but the volume of orders received showed an increase over any previous week in several months.

The better demand was accompanied by a tendency toward higher prices. Carded cones advanced about 1c a pound during the entire range of counts. Eighteens in combed singles was also advanced 1c which places this count at 43 to 44c. Other counts in combed singles remained at the old prices.

There was no change in two-ply mercerized prices, 60s-2 continuing at 82c with 20s-2 at 58c and 70s at 94c. The new prices in carded cones range from 32½ to 33½c on 10s and 35½ to 36½c on 20s. Thrown silk advanced about 15c a pound during the week and was being quoted as the week closed on basis of $6.05 a pound.

Important Upturn in Yarns

Advance in Quotations Stimulates Buyers' Interest

Philadelphia.

THE yarn market has experienced the most noticeable upturn in prices noted this year, prices of carded, combed and mercerized taking part in this general movement which has raised carded yarns from one to two cents above former quotations, combed qualities from two to four cents and mercerized yarns from three to five cents above the previous price list. This is the most drastic advance noted in the yarn market within so short a time this year and has had a decided effect upon manufacturers in all lines. Dealers state they have received a larger number of inquiries during the last two weeks and actual business booked has been, with a number of important factors here, the most active of the year, improvement having been noted during the last two weeks of April, continuing and expanding during the present week.

Larger Sales Reported

Manufacturers who have been looking for a decline in cotton and yarns, withholding placing contracts during recent weeks for this reason, have been in the market for fair sized lines during the last two weeks, this applying to both weaving and knitting carded yarns and also to combed yarns going to knitters, including two-ply combed for mercerizing purposes, it being reported that demand from mercerizers has improved materially during the last week. Manufacturers have been and are endeavoring to place contracts at prices that were being quoted them two weeks ago but find spinners are following the advance in the raw material market in raising asking-prices and it is no longer possible to buy on the old basis.

While the advance in yarns has been a drastic one, spinners call attention to the relation of the raw material and selling prices of yarn, one stating that the margin allowed spinners is now smaller than when cotton was selling at 11½c. At that time this particular spinner sold 20s-2 warps at 27c, leaving the spinner a margin of approximately 15½c. At present this spinner claims they have been quoted 22½c for cotton and as they have sold 20s-2 warps at 36½, this indicates a margin of only 14c. In other words their margin is smaller than when cotton was selling for half the present price, resulting to the disadvantage of the spinner as their overhead charges rise proportionately with the advance in price of their raw material. In other words they claim they are worse off than the smaller margin would indicate as the spinning margin should be larger than when cotton was at the 11½c level.

Knitters Placing Contracts

There has been fairly active buying of carded weaving and knitting yarns during the last two weeks, trading with up-state knitters being noticeably better during this time and contracts for single carded knitting yarns for deliveries starting within the next few weeks and others running until the summer, have been noted. Bulk of this business was placed before the most recent and highest prices were made effective by spinners, and represented covering by manufacturers who have been out of the market waiting for a decline, and seeing the price list going against them came in, making offers at the old level. Spinners here and there were located who were willing to trade with them, compromises in prices being made and a fair volume of knitting business has been booked. A number of houses state last week was the best of the year with them and trading of last two weeks of April brought their total for that month up to a larger figure than noted during March and equal to the poundage booked during a corresponding month last year.

Even more outstanding the advances in carded qualities has been the sudden change in the combed section of the market, many spinners of single combed yarns, for example, now quoting prices three cents above what they were willing to accept two weeks ago. Larger spinners were quoting 18s at 40c to 41c two weeks ago now are naming 43c for this count as their minimum. One of the largest spinners of single combed yarns is quoting finer counts at five cents above prices of two weeks ago, quoting, for example, 60s single at 70c, and while they admit they have not been able to

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Knitting, Its Products and Processes—*Caplan*	2.00
Knitting Calculations—*Tompkins*	3.00
Knitting Mathematics and Mechanisms—*Chamberlain*	3.00
Knitting Mill Handbook—*Merrill*	1.00
Knitting, Science of—*Tompkins*	2.00
Warp Knitting and Glove Manufacture—*Merrill, Murden and Rowan*	6.00
Artificial Silk and Its Dyes—*Mullin*	6.00
Artificial Silk Handbook—*Nasmith*	2.00

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Cotton Yarns—Continued

sell at this figure they are refusing to make important concessions. In this connection it is interesting to note this factor is quoting single fine counts at higher prices than are being named on two-ply. For instance they are quoting 60s single at 70c and yet are willing to sell two-ply for mercerizing at 65c in the same count.

Combed Yarns Follow Carded

As an example of the rapid change that has taken place in the combed section of the market one spinner reports the sale of a fair sized contract in 40s-2 at 56c, the same yarn having been offered with no takers two weeks ago at 52c, sales by other dealers in this count having been reported as low as 50c within the last three weeks. Sales of 60s-2 combed mercerizing twist have been reported this week at 65c comparing with sales made several weeks ago at 60c or less, at one time it being rumored that sales of 58s-2 were being made at 58c. This sale represents an advance of five cents in two-ply combed.

On Wednesday a number of mercerizers changed their price list in accordance with this trend in the combed yarn market and two-ply mercerized counts were raised three cents, bringing 60s-2 up an 85c level. Finer counts of two-ply mercerized were quoted at $1.52 for 90s-2, 100s-2 at $1.82 and 120s-2 at $2.20. The advance in mercerized like that in gray yarns has tended to bring a larger number into the market and larger sales have been reported than at any time this year, the strength of gray yarns imparting a strong tone to mercerized qualities.

British Cotton Trade Decline

MANCHESTER, ENG.—According to the 1928 edition of the Cotton Spinners' and Manufacturers' Directory published by John Worrall, Ltd., Oldham, there has been a reduction of cotton machinery in Lancashire during the last 12 months of 109,211 spindles and 12,584 looms, the totals now being 60,355,871 spindles and 754,940 looms. It is striking to observe that since 1920 there has been a decline of 43,143 looms, but on the other hand during that period there has been a small increase in spindles of 286,477. Since a year ago the chief increases of spindles have been Leigh 346,400; Preston 33,164; Blackburn 25,360; and Stalybridge 24,956. Loom increases are not worth mentioning. The chief cases of loom reductions are: Nelson 4,018; Accrington 1,463; Burnley 1,462; Oldham 1,456; and Blackburn 1,425. The principal spindle decreases are: Oldham 267,068; Mossley 106,110; Bolton 86,188; and Stockport 85,386.

Adams-Millis Corp., High Point, N. C. A merger has been effected of the Adams-Millis Corp., the High Point Hosiery Mills, Inc., the Piedmont Mills Co. and the Kernersville Knitting Co., Inc., of High Point, and a selling corporation, the Pointer Hosiery Mills. The new concern will be known as the Adams-Millis Corp.; stock will consist of 156,000 shares with 17,500 first preferred and 5,000 shares of second preferred. Officers will be J. H. Adams, president; R. O. Lindsay and H. D. Jobe, vice presidents; L. B. Heilig, secretary and J. L. Millis, treasurer.

Cotton Wastes Higher

Spinnable Materials Respond to Advance in Cotton

BOSTON.—The local market is exhibiting a better undertone induced more by higher prices on cotton than by any development of consumer demand for the several wastes. Comber is very strong and the same may be said about peeler strips. Other strips below peeler are firm and moving with relative freedom. The stuffing stocks are still quiet. Threads are in a trifle better demand from machiners.

For a positively strong stock comber must be mentioned. Even at the advanced price of cotton choice material can be sold on a 92½% basis, it is said. The various strips are all firm. Imports of strips and spinnable fly occur regularly and from this may be inferred the fact that although the production of these materials is closely related to the large quantity of cotton going through the mills yet the demand continues larger than the supply.

The rise of 1½c a pound in spot cotton during the week brought about a considerable stiffening in waste values and imparted a much more cheerful tone to the market and also tended to serve notice on laggard consumers that the day of "cheap" wastes had passed and that even better prices would be asked on the several wastes if cotton continued its rise as very generally anticipated. Secretary S. H. Roberts, in a communication sent out to a number of prospective members for the American Cotton Waste & Liner Exchange states that "cotton waste is an involuntary by-product from the process of manufacturing cotton yarn and fabrics. One-fifth of the total poundage of cotton, including bagging and ties, comes out as waste. If combed yarns are produced an additional percentage of waste is removed. Probably 85% of the waste bought and sold in this country is handled by dealers who are members of the exchange and who do business under exchange rules."

Threads for machining are less sluggish. Demand is not large enough and certainly not urgent enough to allow white and colored threads to arrive to normal parity with spot as is the case with spinnable stocks. Stuffing wastes are easy. Stocks are said to be large. Picker ranges from 6 to 7c while for spinnable fly 8½c is about the asking price.

Current Quotations

Peeler comber	18½—19c.
Peeler strips	17½—18c.
Sak. comber	17 —17½c.
Choice willowed fly	8½— 9c.
Choice willowed picker	6½— 7c.
Sak. strips	20 —21c.
Linters (mill run)	5½— 6c.
Spoolers (single)	12½—13c.
Fine White cop	14 —14½c.

Stanley Woolen Co., Uxbridge, Mass. The Calumet Mills of the Stanley Woolen Co. are running on full time day schedule.

Albany (N. Y.) Felt Co. is again operating on night schedules due to increased business demands.

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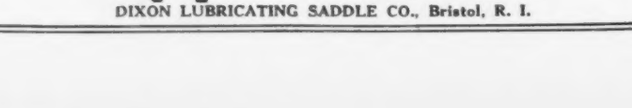

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COTTON

Better Weather Checks Advance

May Sells Above 22c and January Above 21½c Before Buying Slackens

EXCEPT for brief interruptions due to realizing, the advance in the cotton market continued until May contracts sold at 22.08 and October 21.78 on the first day of this month. This advance into new high ground for the movement, carried the market about 5c a pound above the low levels touched early last February, which was evidently sufficient to attract a good deal of realizing. The disposition to take profits became somewhat more general with the appearance of improving weather conditions in the South during the middle of the week and there were reactions in consequence. Fear of a poor start for the new crop based on the unfavorable weather of April, remained in evidence, however, and was reflected by buying on the declines which probably represented a broadening of speculative or investment interest as well as covering by trade or speculative shorts.

Just how serious the setback suffered by the coming crops as a result of unseasonably cool and wet weather during April may turn out to be, probably depends largely upon the character of weather conditions during the coming month. **There is time to plant, and** while an early start for the crop in **southern sections** of the belt seems to be practically out of question, **there will be plently of time** to mature cotton planted during May, particularly during the first half of the month. There can be no doubt that the higher level of prices affords an adequate incentive for the grower and that work will be rushed, weather conditions permitting. According to a report received here from Memphis during the middle of the week, the opinion was expressed by some larger planters in that section, that with three days of good weather, all necessary planting would be completed in the belt. Nevertheless with the crop late at the beginning of May, any further delay or detriment would make a serious impression on sentiment and probably find a substantial response in the market.

Two private reports on the acreage outlook have been published during the week, one of them pointing to an increase of 4.2% and the other of 3.5% in acreage. In connection with these reports, it is pointed out by an experienced cotton man here that the actual acreage is now problematical. He says it may be increased by an advance in prices or may be held down by unfavorable weather, and that the trade is all at sea over the outlook. Reports based on mid-April returns had pointed to an increase of about 9% in acreage, and the late April returns, presumably, reflected some scaling down of intentions as a result of the recent bad weather.

The following table shows Wednesday's closing quotations in the leading spot markets of the country, with the usual comparisons:

Market	April 25	May 2	Ch'ge	Last year	Sales
Galveston	20.55	21.25	+ 70	15.70	4,260
New Orleans	20.66	21.17	+ 51	15.53	7,834
Mobile	20.40	21.10	+ 70	14.95	253
Savannah	20.70	21.26	+ 56	15.32	3,673
Norfolk	20.75	21.25	+ 50	15.38	9,446
New York	21.30	22.00	+ 70	15.95	3,805
Augusta	20.56	21.25	+ 69	15.13	1,587
Memphis	20.00	20.70	+ 70	15.00	13,325
St. Louis	19.50	21.00	+150	14.00	.....
Houston	20.55	21.20	+ 65	15.65	15,500
Dallas	20.20	20.75	+ 55	14.80	19,086

The following differences on and off middling are given as compiled from the report received by the New York Cotton Exchange. The cotton grades marked ** are not deliverable on contract.

	Dallas	Memphis	Montgomery	Augusta	Average
WHITE GRADES					
M.F	1.00†	1.00†	.70†	.94†	.90†
S.G.M	.65†	.75†	.55†	.75†	.84†
G.M	.40†	.40†	.40†	.38†	.39†
S.M	.30†	.25†	.25†	.25†	.25†
S. L. M	.40*	.25*	.38*	.25*	.32*
L.M	.90*	.50*	.88*	.50*	.71*
S.G. O.**	1.90*	1.10*	1.38*	1.00*	1.36*
G.O	2.75*	1.85*	2.00*	1.75*	2.11*
YELLOW TINGED					
G. M	.25*	.25*	.40*	.25*	.30*
S. M	.50*	.75*	.65*	.50*	.63*
M.**	1.25*	1.00*	1.25*	.75*	1.06*
S. L. M.**	2.00*	1.50*	1.75*	1.38*	1.63*
L. M.**	2.75*	2.25*	2.50*	2.38*	2.35*
YELLOW STAINED					
G. M	1.00*	1.00*	1.00*	.75*	.93*
S. M.**	1.75*	1.25*	1.50*	1.50*	1.50*
M.**	2.75*	1.50*	2.25*	2.00*	2.25*
BLUE STAINED					
G. M.*	1.75*	1.50*	1.50*	1.75*	1.53*
S. M.*	2.25*	2.00*	2.25*	2.50*	2.15*
M.**	3.00*	2.50*	3.00*	3.50*	2.92*

* Off middling. † On middling.

Cotton Statistical Data
(Fluctuations of Futures)

	Closed Apr. 26	For Week High	Low	Closed May 3	Net Ch'ge
May	21.09	22.08	20.95	21.49	+.40
June	20.97	21.67	20.97	21.36	+.39
July	20.85	21.85	20.73	21.20	+.35
August	20.80	21.52	20.99	21.17	+.37
September	20.70	21.75	20.67	21.13	+.43
October	20.63	21.78	20.46	21.14	+.51
November	20.56	21.41	20.56	20.98	+.42
December	20.50	21.64	20.36	20.88	+.38
January	20.44	21.53	20.35	20.88	+.44
February	20.45	21.24	20.45	20.88	+.43
March	20.46	21.57	20.46	20.87	+.41
April	.....	21.32	20.85	20.85	.....

Spot Fluctuations for Week
(Middling)

	New York	N. Orleans	Liverpool
Friday, April 27	21.35c	21.08c	.....
Saturday, April 28	21.25c	21.08c	.....
Monday, April 30	22.15c	21.48c	.....
Tuesday, May 1	22.30c	21.55c	11.96d
Wednesday, May 2	22.00c	21.17c	11.90d
Thursday, May 3	21.35c	20.62c	11.85d

Spot Fluctuations and Stock

	Prices May 3	Stocks This week	Last year
Galveston	21.25	308,634	375,847
New Orleans	21.17	346,773	526,612
Mobile	21.10	12,107	23,875
Savannah	21.26	21,674	77,396
Charleston	.....	29,430	51,515
Wilmington	.....	26,486	24,747
Norfolk	21.25	66,414	82,723
New York	22.00	127,112	227,661
Houston	21.20	507,624	572,423
Augusta	21.75	53,749	84,440
Memphis	20.70	185,347	171,103
St. Louis	21.00	4,045	5,050
Little Rock	20.45	11,506	26,728

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Quissett Yarns are easy-running in knitting machine and loom. Interruptions are infrequent. When the dyeing stage is reached, their inherent quality shows in the evenness and penetration of the dye.

Quissett's popularity is gauged on *performance*. Price doesn't enter in except that it is merely consistent.

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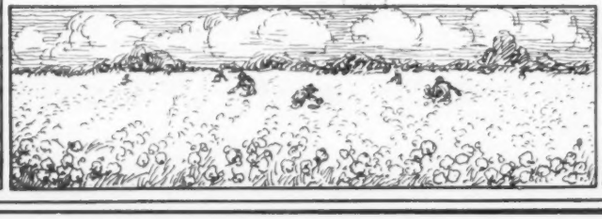

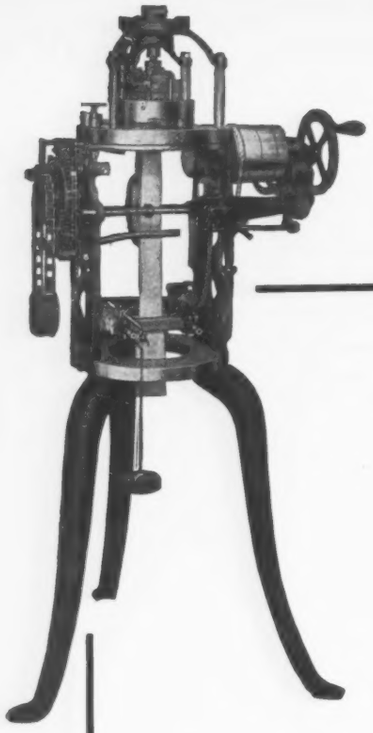

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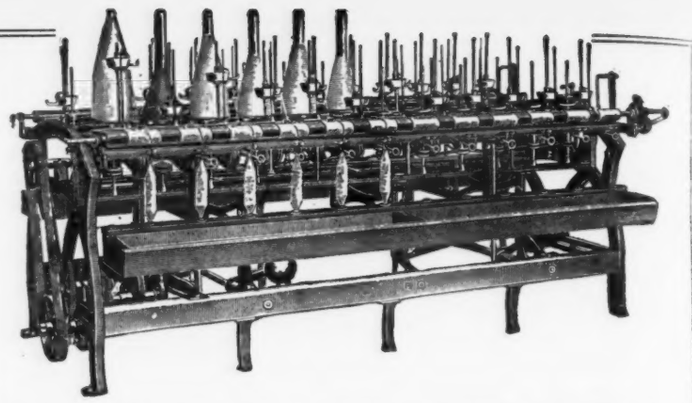

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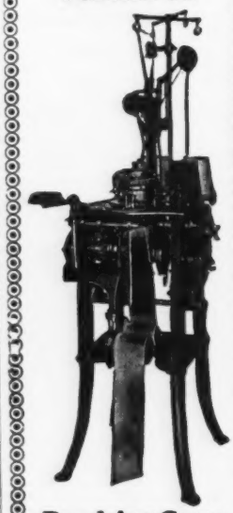

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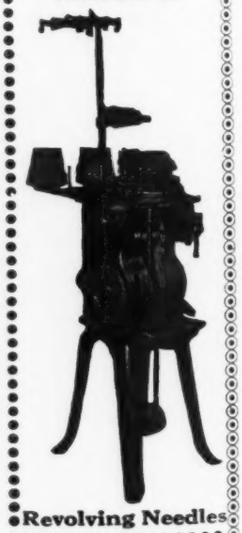

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Cotton—Continued

Staples Remain Slow

Condition Unusual in View of Rise in Futures

MEMPHIS, TENN., April 28.—Inquiry for staple cottons remains dull and actual business is extremely slow, an abnormal condition, considering that basis is at the low of the season and the recent advance in futures. Buying activity is seldom to be expected on a declining market but the continued neglect of staples in the face of the recent movement in contract values is puzzling, not to say disappointing, to owners of unsold stocks. Some merchants see enough in the present low basis on staples to be willing to add moderately to their stocks, although they have been long of staples, with a narrow outlet, all season; their willingness to increase their stocks of staples is a recent development and has not resulted in a great deal of buying so far, largely because first hands are not offering freely at quoted values, to wit: for 1 1/18" strict middling, 250 on July; 1 3/16", 350 on; 1¼", 500 on. Also the desire on the part of merchants to increase long interest is not general.

First hands have the idea that it is just a question of time until consumers of staples must come into the market on a much larger scale and most of them are patient to wait. It is argued that the recent advance in futures was due to adverse weather conditions and that the consumer interest probably distrusted the advance because of the possibility that the weather condition may be corrected in time to produce a full crop. The crop start is undoubtedly late although preparations, preliminary to planting, were unusually well advanced. Weather conditions during the last two weeks, or a little more, have been bad. Western Texas is still too dry and is getting worse. Comparatively little planting or replanting has been accomplished anywhere in the belt since about the middle of April. Unfavorably low temperatures prevailed all over the belt; freezing temperatures were recorded over most of the northern half of the belt two weeks ago; a week later Oklahoma, Arkansas and northern Louisiana and all States east of the Mississippi River were visited by heavy to torrential rains. Rains were heaviest in southern Georgia, and southern Alabama, ranging from six to more than eight inches in 24 hours at some points; two to four inches were recorded at many other points elsewhere in the belt. These rains delayed field work, washed the soil and packed it, so that it will be difficult for the seed to push its way through, and flooded some lands.

Staples Quiet at Advance

Lower Basis Fails to Help Sales — Egyptians Advance

BOSTON, May 2.—The further advance in cotton futures scored this week has been offset in its effect upon prices of premium and extra staple cottons by very freely offered concessions in basis of 25 to 50 points. The advance, however, has been sufficient to reduce actual sales to inconsequential volume, and in the local market this has been so small as to afford no real guide to current quotations. The latter as listed below are really asking prices of a majority of shippers, rather than selling prices, and in the case of extra staples they are subject to concessions of at least 50 points in basis. This means that the actual advance for the week is not more than 50 points, excepting upon full 1¼ in. and longer hard western cotton which is relatively firmer. Demand from southern spinners, and particularly from the tire trade, is reported to have shown some improvement, but the latter trade is said to be buying Delta cottons only in a hand-to-mouth manner in the hope that Egyptian prices will decline later on.

The highs on Egyptian contracts for the week were touched yesterday when May Sak. closed at $42.08 and the November option at $43.64, the former being advanced 93c and the latter $1.34 for the week; today the June option declined 13c and the November option 24c, the former closing at $41.95 and the latter at $43.40; the latter figure is just $1 below the top for the season touched April 14, but is an advance for the week of $1.10. June Uppers at $28.95 are up 53c for the week, but are 13c below yesterday's high. The October option closed today at $29.36, which is an advance of 86c for the week and a decline of 12c from yesterday's closing, but is 31c above the previous high of April 14.

Current Quotations

Average prices for May-June shipments of middling and strict middling hard western cotton (government lengths) are as follows:

	Middling	St. Middling
1 1/16 in.	24¼ to 25c.	24⅝ to 25¼c.
1 1/16 in. to ⅛ in.	24⅞ to 25¼c.	25¼ to 25⅝c.
1 ⅛ in.	25 to 25½c.	25½ to 26c.
1 3/16 in.	26 to 26½c.	26½ to 27c.
1 ¼ in.	29 to 30c.	30 to 31c.

Basis on N. Y., July, 21.23c.

Market Statistics

Basis Middling

	Saturday, April 28	Saturday, April 21
10 markets average	20.67	19.69
Memphis	20.45	19.25

Premium Staples

First Sales from Factors Tables at Memphis

Grade Strict Middling	Prices steady
1⅛-in.	23¼@24c
1 3/16-in.	24¼@24¾c
1¼-in.	25½@26¼c

Current Sales

	For week	Prev. week	Week before
Memphis total	12,150	10,775	16,475
F. o. b. included in total	6,450	7,700	10,975
10 markets	65,854	53,800	66,949

Memphis Receipts, Shipments, Etc.

	For week	Last year	Year before
Net receipts	3,766	4,721	3,651
Gross receipts	10,060	21,690	13,520
Total since Aug. 1, net	641,040	755,923	718,786
Shipments	16,429	30,137	18,928
Total since Aug. 1	1,287,458	2,088,501	1,522,259
Total stock	194,584	173,907	260,201
Decrease for week	6,367	8,457	5,408
Unsold stock in hands of Memphis factors	47,000	63,000	98,000
Increase for week	4,927	3,000	2,000

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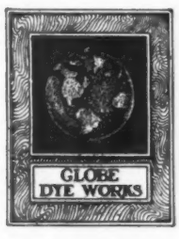
GLOBE DYE WORKS CO.

Dyers, Bleachers & Mercerizers

Kinsey & Worth Sts.

Frankford, Phila.



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YARNS

COLORS, OXFORDS
AND FANCY MIXES

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French Spun Worsted Merino

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LOS ANGELES—Arthur Bone, 698 S. Rio St.
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YARNS

OF EVERY DESCRIPTION

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BOSTON PHILADELPHIA CHICAGO

PASSAIC WORSTED SPINNING CO.

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WORSTED YARNS

Half Blood Tops Move Close to Fine

Upward Price Revision Based on New Wool Values—Crossbred Noils Lag Behind

BOSTON.—A general advance in tops occurred during the week. The chief exception was in fine tops which are still quoted $1.45. Sales of ½ blood have actually occurred at $1.40 and such is the dearth of wool of this grade and the relatively good demand that it is not considered an impossibility that ½ blood tops may cross fine tops in the near future. Additional business has been placed in 56s at $1.20, a new high price for the movement and in 46s at $1.07½. The bulk of the new business was on tops for weaving yarns. Topmakers are taking the position that prices on future business must be based upon new wool values. Deliveries on old contracts continue very good.

The noil market continues sluggish. It seems as though noils have discounted quite fully the strong wool market and that even if wools went higher this would not mean that noils would share in the rise. The market is under the impression that stocks are slightly below normal. The price level is high and yet it is not high enough to allow of any large imports of Continental and British noils when the heavy duty of 19c per pound is tacked onto the import. Crossbred qualities have for year to date lagged behind the rise in the finer qualities and in this respect stand out in sharp contrast to the exactly reverse situation in wools. Some little movement in fine colored noils is seen. Said an importing house "We have been in receipt recently of several inquiries on foreign colored noils and are sounding out the market in the Bradford district."

Top and Noil Quotations

Tops—Boston

Fine	(64–66s)	$1.45
Half-blood	(60–62s)	1.38/1.40
High ⅝ blood	(58s)	1.28½/1.30
Aver. ⅝ blood	(56s)	1.25 /1.27
Low ⅝ blood		1.19 /1.20
High ¼ blood	(50s)	1.15
48s N. Z.		1.10
46s S. A.		1.07/1.08
44s		1.00
40s		.92/ .93
36s		.92/ .93

Tops—Bradford, Eng. (April 27)

Fine	(70s)	57d
Fine	(64s)	55½d
Half-blood	(60s)	53½d
Half-blood, low	(58s)	47½d
Three-eighths blood	(56s)	43d
Quarter-blood	(50s)	34d
Cross-bred	(46s)	27d

Noils—Boston

Fine	$.95– $.98
Half-blood	.85– .90
High ⅝ blood	.75– .80
Aver. ⅝ blood	.65– .70
Low ⅝ blood	.60– .63
High ¼ blood	.60– .62
46s	.53– .55
44s	.50– .52

Survey of Yarn Trade Planned

University of Pennsylvania Studying Sales Yarn Field

Philadelphia.

An important announcement to the worsted spinning industry was contained in a recent letter sent out by the National Association of Worsted & Woolen Spinners to the effect arrangements with the Industrial Research Department of the Wharton School of Finance and Commerce, University of Pennsylvania, were being made whereby that bureau would undertake a survey of the worsted spinning trade of this country. A questionnaire giving vital statistics on production, sales, etc., for several years back was enclosed and it is hoped sufficient returns from this will have been received by the time of the annual meeting of the association, May 9, to indicate the desires of a sufficient number of sales yarn spinners to join such a survey, to make it the most far-reaching and comprehensive study so far made in the worsted yarn field.

Speaker at Annual Meeting

A considerable amount of work along these lines and months of study of the spinning trade have already been completed by the Industrial Research Department, this work being conducted under the direction of Dr. A. H. Williams, professor of industry, who has successfully conducted similar surveys in other fields, notably among the metal trades of this country. Dr. Williams will be one of the speakers at the annual meeting of the National Association of Worsted & Woolen Spinners, May 9, and at that time will give further details of the survey and what it is intended should result from it for the benefit of the entire worsted yarn trade. It is reported Dr. Williams has collected and will include in his address statistics and other details of the worsted spinning field that have not been gathered heretofore.

It has been apparent during recent years and particularly during recent months that the spinning and merchandising of worsted yarns were not being conducted along as efficient and modern lines as have been adopted and placed into effect by other industries in this country and several leaders in this trade have come to the conclusion that a comprehensive study of the entire problem should be made. It is hoped this survey to be undertaken by the Industrial Research Department of the University of Pennsylvania will show in a graphic and concise manner the position of the entire sales yarn trade, the relation between production, sales and consumption, etc., during years past. When information of such character is available it is hoped by leaders in this movement that corrective measures will be more easily found and the measures of correction more rapidly pushed to a conclusion. For these reasons it is hoped the coming meeting will represent a large part of the industry.

Accurate Data Essential

An example of what might possibly be accomplished by a statistical survey is indicated in current conditions in the outerwear section of the market. Spinners of these yarns report a small volume of new business during the month of April when the price range for 2-20s, 50s, has varied between $1.40 and $1.45. Yet the same spinners state shipments on old contracts, taken several weeks or months ago, have continued during that month at a fair to good rate. In other words they have been shipping on old contracts at a much more active rate than they have booked new orders and unless this condition changes within the next few weeks further decline in activity of these spinners will be seen. In view of such a situation information as to the average amount of advance business in hand by all spinners would be of benefit, giving them a rough idea when they may reasonably expect manufacturers to again come into the market in volume. Such information would tend to keep production closer to consumption than when definite statistics are unavailable.

One of the outstanding developments in the market during the last week has been the important advances made in yarns spun from three-eighths wools, many spinners having advanced quotations on these grades five cents as compared with previous quotations. Advances in yarns were made necessary by the strength of the wool and top market in this grade and half blood, although changes in half blood and fine yarns have not been so drastic as in three-eighths during the last week.

This indicates the violent upturn in quarter blood yarns of recent months and weeks is being followed by a similar trend in three-eights and half blood, which have been lagging behind quarter blood during recent weeks in the upward movement. Many spinners state they are, for the time being, quoting three-eighths grade yarns at practically the same figures they are naming on half blood and fine, the range between them being smaller than has been noted heretofore.

Outerwear Counts Higher

While three-eighths has been the outstanding grade this week it is apparent the advance in quarter blood has not been concluded and many spinners of outerwear yarns have placed into effect quotations on these counts averaging five cents above those of last week. A majority of spinners are quoting 2-20s, 50s, at $1.45 and not a few are refusing to sell at that figure, naming $1.50 as the low limit. Manufacturers are not displaying large interest in new commitments and the $1.50 quotation up to the present time is largely nominal. Little business of importance has been placed by outerwear manufacturers this week irrespective of price and while yarn is available in limited quantities under spinners' quotations it is reported that no large buying could be done at less than $1.45 for that count.

The weaving section of the market is quiet in this vicinity, men's wear manufacturers not being active buyers, dealers stating that April was the least active month of this year. Spinners of men's wear mixtures have again advanced quotations, one of the leading spinners quoting fine and half blood recombed mixes at $2.17½ for 2-36s, an advance of five cents.

WORSTED YARN QUOTATIONS

(Corrected to Close of Business Wednesday)

Bradford System

2-12s, low com. (36s)	1.10-1.15
2-16s, low com. (36-40s)	1.15-1.20
2-20s to 2-24s, low ¼ (44s)	1.30-1.35
2-20s to 2-26s, ¼ bld. (46-48s)	1.37½-1.43½
2-26s to 2-30s, ¼ bld. (48s)	1.45-1 50
2-30s to 2-32s, ¼ bld. S. A. (46s).	1.50-1.55
2-32s, ¼ bld. (48-50s)	1.55-1.57½
2-20s, ⅜ bld. (56s)	1.62½-1.65
2-26s, ⅜ bld. (56s)	1.67½-1.70
2-36s, ⅜ bld. (56s)	1.72½-1.75
2-32s, ½ bld. (60s)	1.75-1.77½
2-36s, ½ bld. (60s)	1.80-1.82½
2-40s, ½ bld. (60s)	1.85-1.87½
2-50s, high, ½ bld. (64s)	2.00-2.05
2-50s, fine, (66-70s)	2.07-2.12
2-60s, fine, (70s)	2.60-2.65

French System

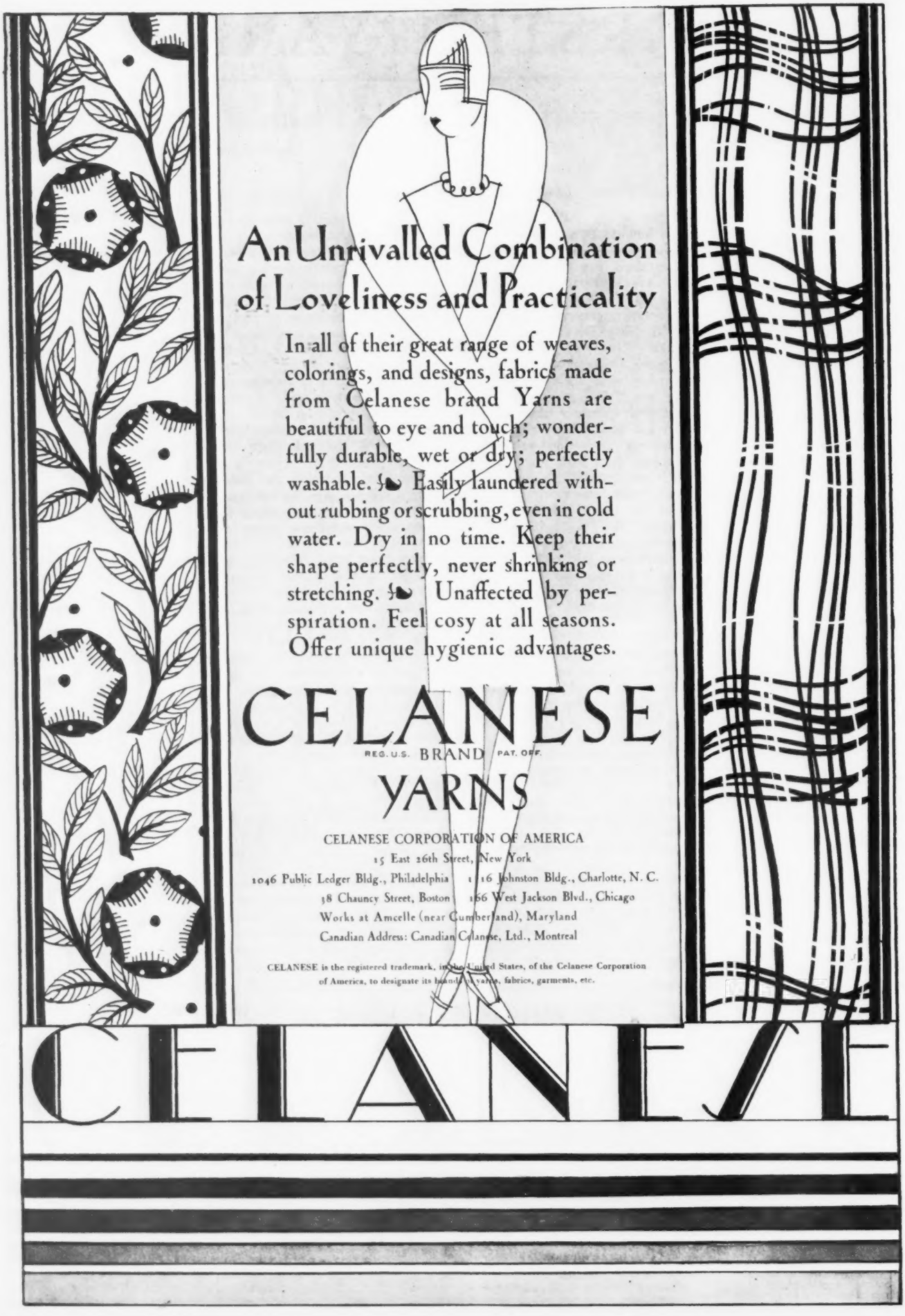
20s, high, ¼ bld. (50s)	1.50
20s, ⅜ bld. (56s)	1.57½
26s, ⅜ blood (56s)	1.62½
30s, ½ bld. (60s)	1.77½-1 80
30s fine warp (66–70s)	1.87½-1.92½
40s, ½ bld. (60–64s)	1.95-1.97½
50s, (66–70s)	2.12½-2.17½
60s, (70s)	2.62-2.72

Knitting Yarns in Oil (Bradford)

2-20s, low, ¼ bld. (44s)	1.25-1 30
2-18s to 2-20s, ¼ bld. (50s)	1 45
2-26s, ¼ bld. (50s)	1.50
2-30s, ¼ bld. (50s)	1.55
2-20s, ⅜ bld. (56s)	1.57½-1 60
2-20s, ½ bld. (60s)	1.75-1 80

French Spun Merino White

30s, 50-50	1.35-1.37½
30s, 60-40	1.45-1.47½
30s, 70-30	1.55-1.57½
30s, 80-20	1.65-1.67½



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CELANESE

Worsted Yarns—Continued

March a Poor Month

Activity Near Bottom for Past 27 Months—Market Slow

BOSTON.—The worsted yarn market shows little change from a week ago. Sales are still being made below replacement costs. No sooner are yarn prices lifted a trifle than wools and tops take another little jump. Tops are higher this week and so are medium wools. There never was a market so harassed within and without. A real problem is offered the Wool Institute, Inc. It is said that yarn prices are sustained by strength in wool. Well, they ought to be, but are not. Low prices sustain themselves. "The sales spinner seems to be working for a dead horse" said a market factor. And now the ½ bloods are rising both wools and tops and while a self-contained mill with cloth orders on its books can pay the advanced prices it is altogether another matter with the concern that spins yarns to sell. Looking at the market broadly it is still in a poor way and general improvement is likely to be slow.

The month of March judged by active spindle activity was far from favorable for the industry, a decline of 7% as compared with February. Twice only in the past two years has spindle activity fallen below the March figure. It can hardly be said that there is any overproduction taking place especially among sales spinners. The following table gives percentage of activity spindle hours for concerns reporting approximately 95% of the industry, with 100 representing full single day shift:

	Lows	Highs
June 1926	55.7	79.9 November
July 1927	59.2	74.4 October
March 1928 ...	60.9	68.0 February

The general policy of yarn buyers in the Bradford district is to rely upon contracts already placed and to defer as long as possible further buying. The Continent is said to be slow in supplying particulars on contracts but English consumers are taking yarns as made. Absence of new business is having the usual depressing effect and on the whole there is a decided lull in the market. Spinners are finding increasing difficulty in keeping their machinery running full. Considerable business is offered well below the market and as in the American market there are weak sellers whose acceptance of such business tends to undermine the situation.

BRADFORD (Eng.) YARNS

	s	d
2-16s, 36s	2	6
2-24s, 44s	2	9½
2-36s, 58s	5	0
2-48s, 64s	6	0
2-60s, 70s	7	6

Joseph Blumenthal Moves to Larger Quarters

Joseph Blumenthal, yarn dealer, has moved to larger quarters at 55 Orchard St., New York City. The concern will continue to specialize in the buying and selling of various qualities of yarn. The regular line of Diamond Brand hand knitting worsted yarns and cordennete crochet yarns will also be stressed. Jacob Blumenthal will head the worsted yarn department and Isidor Blumenthal will purchase for and manage the cotton yarn department. The former location was at 34 Orchard St.

Wool Consumption Less in March

WASHINGTON, D. C.—The Department of Commerce has announced statistics with regard to the consumption of wool, in the United States during March, based on reports received from 498 manufacturers operating 556 mills. The reporting mills are equipped with 49,016 looms, 4,824 sets of woolen cards, 2,146 worsted combs, and 3,326,544 spindles. This is exclusive of 14 manufacturers operating 61 mills who failed to report for this month. According to reliable textile directories for 1927, these nonreporting mills are equipped with approximately 11,717 looms, 1,285 sets of woolen cards, 521 worsted combs, and 923,576 spindles.

The total quantity of wool entering into manufacture as reported during March, 1928, reduced to a grease equivalent, was 46,757,305 lbs., as compared with 48,323,520 lbs. reported by 499 manufacturers for February, 1928; and 54,262,378 lbs. reported by 515 manufacturers for March, 1927.

The monthly consumption of wool (pounds) in grease equivalent for manufacturers reporting for 1928 was as follows: January, 45,087,427; and for February, 48,323,520.

The total quantity of wool consumed during March, 1928, was 40,154,951 lbs., as compared with 42,114,183 lbs. in February, 1928, and 47,426,740 lbs. in March, 1927. The consumption shown for March, 1928, included 31,608,940 lbs. in the grease; 5,630,526 lbs. of scoured wool; and 2,915,485 lbs. of pulled wool.

Of the total wool used in March, 1928, 55.4%, was domestic wool; and 44.6%, was foreign wool.

The following tables show the quantities of wool consumed, classified according to grade and class, with comparisons:

(Quantities in thousands of pounds)

	Total for March		Total Jan. to Mar incl.	
Class and grade	1928	1927	1928	1927
Total	40,154	47,426	121,522	128,041
Domestic	22,246	22,475	70,882	60,863
Foreign	17,908	24,950	50,640	67,178
Combing [1]	21,246	27,097	66,416	73,231
Clothing [1]	7,020	7,390	20,243	19,372
64's, 70's, 80's (Fine)	10,667	11,894	31,335	33,430
58's, 60's (⅛-Blood)	4,558	5,259	15,634	14,133
56's (¼-Blood)	4,934	6,980	15,216	18,196
48's, 50's (¼-Blood)	5,168	6,465	16,616	16,817
46's (Low ¼-Blood)	1,460	2,551	4,096	6,272
44's (Common) [2]	224	125	478	275
36's, 40's (Braid) [2]	140	152	555	323
36's, 40's, 44's, (Lincoln) [2]	1,114	1,058	2,727	3,154
Carpet [3]	11,887	12,939	34,862	35,437
Total, reduced to grease equiv. [4]	46,757	54,262	140,168	146,589
Domestic	26,597	27,383	84,396	73,871
Foreign	20,160	26,879	55,771	72,717

[1] Exclusive of carpet wools. [2] All domestic. [3] All foreign. [4] In computing the grease equivalent, 1 lb. of scoured wool is considered equivalent to 2 lbs. in the grease; and 1 lb. of pulled, to 1⅓ lbs. in the grease.

Pocasset Worsted Company, Inc.

Worsted Yarns

Office and Mills — Thornton, R. I.

WORSTED YARNS — GRAY AND FANCY SHADES — BRADFORD — STEEL — SYSTEM — TWISTS AND MIXTURES — WEAVING-KNITTING

WARNER J. STEEL

Successor to EDWARD T. STEEL & CO.

Mills and Office — BRISTOL, PA.

OSCAR HEINEMAN CORPORATION

RAW & THROWN SILK

ARMITAGE, FAIRFIELD AND WASHTENAW AVENUES

CHICAGO

RAYON TOPS·NOILS PICARDED

Spunrayarn and Rayon-Worsted Blends

ABEECO MILL, INC., 505-5TH AVE., NEW YORK CITY

CANADIAN REPRESENTATIVES: WM. B. STEWART & SONS, LTD., TORONTO-MONTREAL

WORSTED and MERINO FRENCH SPUN YARNS For KNITTING and WEAVING

JULES DESURMONT WORSTED CO., WOONSOCKET, R. I.

Philadelphia and Southern States—Thomas H. Ball, 1015 Chestnut St., Philadelphia, Pa.
New York—Charles Heyer, 1 Madison Ave.
Chicago—C. M. Patterson, 222 W. Adams St.
Boston and New England States—Messrs. H. W. Dwight and Walter Skerry, 10 High St., Boston.
Los Angeles, Calif.—Harvey J. Masteller.

THE KENT MFG. CO.

Clifton Heights, Pa.

WORSTED YARNS

French Spun

Rayon comes into its own!

Rayon's *future* in home and wardrobe assured

RAYON'S future is secure. Its growing popularity today rests on no fleeting fancy, no passing style. A hundred vogues—and particularly the age-old vogue of quality—have combined to establish rayon in the home and in the wardrobe. The new and finer rayon as developed by du Pont has made unique contributions to the textile field—new effects in color and line, unusual strength and durability, surprising softness and a lustre toned to every mode.

Throughout the textile industry, knitters and weavers alike are realizing every day more keenly the possibilities of rayon, the new textile. Du Pont Super-Extra Rayon has certain definite contributions to make to your business

What part is this finer rayon playing in your business today? What part will it play tomorrow? If you seek new ways and new profits through rayon remember that wherever there is a textile manufacturer of dominance almost invariably there is a user of du Pont Super-Extra Rayon.

Du Pont *Super-Extra Rayon*

DU PONT RAYON
REG. U. S. PAT. OFFICE

Du Pont Super-Extra Yarns are *truly* multi-filament	
Denier	*Filaments*
65	26
80	30
100	40
125	50
150	60
170	60
200	80

DU PONT CHEMICAL CONTROL ASSURES DU PONT QUALITY

RAYON AND SILK YARNS

Finer Rayon Sizes Are Still Scarce

Premiums Are Reported on 80 Denier—Staple Sizes Are Dull

April is understood to have been a rather dull month for nearly all the leading producers as far as the staple 150 denier and 300 denier yarns are concerned. It is thought that demand fell behind production in these sizes only by a moderate margin, but that a note of caution in the plans of manufacturers has been responsible for some backing up of yarn in producers' hands.

It is probably a fact that stocks of rayon are larger now in producers' hands than in January, but by the same token stocks in the hands of dealers and mills are smaller. Whether the one over-balances the other, leaving a considerably larger surplus in the country, cannot definitely be said by one who is not cognizant as to the situation of the leading makers of rayon. One thing, however, can be definitely pointed out and that is that supplies of imported rayon reached a peak of above 3,000,000 pounds according to the last report.

Some underselling has been reported on the part of importers, occasioned, no doubt, by a desire to lighten some of the burden of inventory they are carrying. Contrasting with the situation in the heavier staple counts is the undoubted scarcity in the finer sizes. All deniers from 100 downward are difficult to find. Sixty denier is scarce and also 80 and 100 with premiums reported paid for spot quantities of the latter two. As far as a difference in the situation regarding higher and lower grades, is concerned, it can be said that the "B" grade and also what passes for "run of the mill" are much more plentiful than real "A" grade yarn. Mills find good running yarn an absolute necessity these days.

Spun Silk Unchanged

Buying Maintains the Improvement Noted in April

The moderate but rather definite improvement noted during the greater part of April was maintained last week. Silk mills continue to operate on slightly heavier schedules which is translating itself into more active buying of spun yarns. The woolen mills and other customers outside the silk trade are also showing greater interest in the heavier counts in the ply yarns. Silk mills are for the most part taking the single yarns for use in satins for the fall season.

(2%—30 days)

60-2	$4 45	40-2	$4 15
50-2	4 30	62-1	2 40

World Rayon Now 267,118,000 lbs.

IN the Annual Review and Forecast Number of TEXTILE WORLD, published Feb. 4, 1928, estimates of rayon production and consumption in the various countries of the world were printed.

From the same source, namely, the Manchester (Eng.) rayon correspondent of TEXTILE WORLD, has just come a revised tabulation, as shown in the accompanying table. These revisions are based on more complete and definite information secured since the first of the year. The grand total of production, 267,118,000 lbs., is slightly over the estimate of world output published in February, which was 265,900,000 lbs.

REVISED ESTIMATES OF WORLD PRODUCTION AND CONSUMPTION OF RAYON IN THE YEAR 1927

Country	Production	Imports	Exports of: 1927 Prod.	Exports of: *Old Stocks	Consumption
	Thous. Lbs.	*Thous. Lbs.*	*Thous. Lbs.*	*Thous. Lbs.*	*Thous. Lbs.*
Austria	3,500	2,500	3,000	.....	3,000
Belgium	13,500	1,342	7,865	.....	6,977
Czecho-Slov	3,500	6,615	1,000	.....	9,115
France	21,000	834	10,565	4,000	15,269
Germany	31,000	20,900	9,460	.....	42,440
Britain	38,803	2,490	8,358	.....	32,935
Holland	16,500	2,200	15,294	2,000	5,406
Italy	36,000	1,100	32,684	5,000	9,416
Poland	4,000	250	2,500	.....	1,750
Spain	1,000	3,000	.....	.....	4,000
Switzerland	10,340	3,615	7,260	1,000	7,695
Others	1,700	.....	.....	.....	3,500
Total EUROPE	180,843	.....	.....	.....	141,503
China	.....	8,500	.....	.....	8,500
India	.....	8,478	.....	.....	8,478
Japan	8,000	3,000	.....	.....	11,000
Total ASIA	8,000	19,978	.....	.....	27,978
Canada	2,600	2,000	.....	.....	4,600
United States	75,300	16,211	.....	.....	91,511
Others	.....	750	.....	.....	750
Total N. AMERICA	77,900	18,961	.....	.....	96,861
Total S. AMERICA	375	5,000	.....	.....	5,375
Australasia	.....	3,500	.....	.....	3,500
GRAND TOTALS	267,118	.....	.....	.....	275,217

* The seprarte column for old stocks exported is necessary on account of the abnormal stocks held in European countries at the end of 1926. The two columns Nos. 3 & 4 taken together represent total exports.

DOMESTIC RAYON PRICES

Denier	"A"	"B"	"C"
35	$3.50	$3.25	....
50	2.75	2.50	....
75	2.50–2.55	2.30–2.35	$2.20
80*	2.60	....	....
90	2.30	2.15	2.05
100	2.15	2.00	1.90
100*	2.25	....	....
120	1.80	1.70	1.60
125	1.75	1.65	....
130	1.70	1.60	1.50
140	1.60	1.50	1.40
150	1.50	1.45	1.35
150*	1.75	....	....
170	1.45	1.40	1.25
170*	1.70	....	....
200	1.45	1.40	1.25
200*	1.70	....	....
250	1.35	1.30	1.25
300	1.30	1.28	1.25
450	1.20–1.25	1.20	1.20
600	1.15–1.25	1.20	1.15
750	1.15	....	....
900	1.15–1.20	....	....

*** Multi-filament.**

CELANESE

Denier		Denier	
45	$4.00	170	$2.85
75	3.25	200	2.75
100	3.15	300	2.70
150	2.90		

BEMBERG (Cuprammonium)†

Denier	Filaments	Price
40	30	4.50
60	45	3.75
80	60	3.50
100	75	3.25
120	90	2.90
150	112	2.40
180	135	2.30
240	180	2.25
300	225	2.25

† All A grade; 2½ turns; unprepared in skein.

Chatillon Selects Site

Rome, Ga., to Get New Rayon Plant

Rome., Ga., has been selected as the site for the rayon plant of the newly organized American Chatillon Corp., which has held its first meeting. Plans call for the production of 12,000 lbs. daily of viscose rayon and 6,000 lbs. daily of cellulose acetate rayon during the first two years, the production to be doubled about 1930. The plant should get into operation about March, 1929. Lockwood, Greene & Co. have been selected as engineers for the plant.

The American Chatillon Corp. represents both American and Italian capital, having been formed with the cooperation of La Soie de Chatillon, second largest producer of rayon in Italy whose product has been imported into this country for some time. The corporation has an authorized capital of $10,000,000, consisting of 100,000 shares of cumulative preferred stock and 1,000,000 shares of common stock of no par value. Of this, 50,000 shares of preferred stock and 600,000 shares of common have been issued. It is understood that the issue has been over subscribed several times.

The officers of the corporation are Dr. Mark Brioli, president; U. Mancini, vice-president; M. E. Tanham, temporary treasurer, and W. B. Gellard, secretary. The directors include H. S. Davis, of Blake Bros.; C. C. Lawrence, of Maynard, Oakley & Lawrence; S. Liebenguth, of de St. Phalle & Co.; F. Powdrell, of W. T. Grant Co.; Senatore Ettore Conti, of the Italian Chatillon Company; W. W. McLellan, of McLellan Stores, and D. M. Balsam of D. M. Balsam Co.

Offices of the American Chatillon Corp. have been opened at 393 Seventh Avenue, New York.

Joins Industrial Rayon

Bruce Griffin Appointed Assistant Sales Manager

The Industrial Rayon Corp. of Cleveland announces the appointment of Bruce Griffin as assistant sales manager, effective May 1.

Previous to joining this corporation, Mr. Griffin was for some time past a partner of Dalglish & Co., selling agents, who represented the Industrial Rayon Corp. in the New York State territory. His years in the mercantile business and extensive ac-

THE ROMANCE OF

Bemberg

The scene, in a smart shop, in any American city. Time, early summer of 1928

Customer: (pausing beside a display of colorful fabrics) What is this lovely material? I've never seen anything exactly like it, and so reasonably priced, too.

Saleswoman: No, I suppose you haven't, for it is quite new. It is made of Bemberg.

Customer: That's a coincidence. We happened to have a famous chemist for our dinner guest last night and he told us something about the discovery of Bemberg, so I am particularly interested to see it in fabrics.

Saleswoman: You'll be delighted with it when it is made up. It drapes and tailors so beautifully.

Customer: Is Bemberg imported?

Saleswoman: No, Bemberg is made in America now, in one of the largest and finest equipped plants in the world. It has been used successfully in Europe for many years in all sorts of knitted and woven goods. Some of the loveliest imported fabrics are of Bemberg, and now American manufacturers are originating many beautiful things with it.

Customer: It's quite impossible to distinguish it from natural silk by the feeling or the appearance, isn't it?

Saleswoman: That's because Bemberg yarns are made by a wonderful stretch-spinning process that gives Bemberg the evenness, the elasticity and the soft, crunchy feeling of high-grade silk.

Customer: It seems like a fairy tale to think that the genius of a man can produce anything so lovely and durable.

Saleswoman: The best part of it is that no amount of wear will change its beauty. All colors can be made tubfast as well as sunfast.

Customer: That's a tremendous help. I've had so many silk frocks faded and spoiled by the sun shining through the window glass of my car when I'm motoring.

Saleswoman: You need not worry about Bemberg for it is being used in all sorts of beach costumes and sports dresses.

Customer: Does it stand washing? It really looks too fine and luxurious to be very durable.

Saleswoman: All our customers say it washes perfectly. While it is wonderfully absorbent, it won't fall to pieces from perspiration as many fabrics do. It needs no special care in the laundry. It may be washed in hot water and ironed with a hot iron, and it does not pull and lose its shape when wet.

Customer: Help me to select something for a dress. The designs and weaves are all so intriguing that it's hard for me to decide which one I like best.

The curtain falls on the saleswoman helping the customer to make a selection

Bemberg

AMERICAN BEMBERG CORPORATION
180 Madison Avenue, New York City

Smart Fabrics of Bemberg are being introduced to discriminating women through a series of advertisements appearing in women's fashion magazines. Above is shown the second in the series, as it appears in May 15 Vogue and June Ladies' Home Journal.

Rayon and Silk Yarns—Continued

quaintance with the trade, fit him admirably for the duties he now assumes.

Mr. Griffin will make his headquarters at the general offices of the corporation at Cleveland, from which point he will operate in the handling of sales through the company's branches.

A. A. Murphy, the sales manager of the corporation, will continue to make his headquarters at the New York office, 200 Madison Avenue, as in the past.

Canton Raw Silks Are Firm

Spot Quantities Scarce and High in Price—Increasing Use Noted

THERE is the distinct possibility that the Canton market, regardless of what happens in Japan raws, will be firm for some months to come. Ordinarily at this time, that is to say in May and June when new crop silk comes from the interior in larger than normal quantities, some weakness would be observed. There is first of all the fact that the quality of the first and second crops in Canton are not the equal of the silk at the end of the old season. Then again manufacturing operations in the United States are usually lower in the second quarter which must be considered in relation to the heavy arrivals. This year, however, instead of the customary weak statistical position, the market is very strong.

Stocks of old season silk are small abroad and arrivals do not seem to be heavy in spite of the fact that nearly all of the crop is being reeled in 14/16 due to the lack of interest shown for several years in the 20/22 and 22/26 sizes. In the United States, stocks of Canton are smaller than in years. It might be going too far to say that a famine scarcity prevails, but something very close to this is actually being experienced. Last week manufacturers and dealers in need of spot quantities of 14/16 had to pay $4.40 and above. Sales were reported made as high as $4.50 for small quantities.

It is possible that a strong market will continue for there are indications that instead of the use falling off during May and June, still larger quantities will be needed. The same mills that have been using the grade in a cheaper quality crepe right along are in many instances putting more looms on this number. In addition the demand for goods at a price is causing many mills to use 14/16 filling for satins for the fall season. They are able to do this because of the fact that the back of the goods will not be used, but only the satin face. Uneveness in the filling even in weighted goods is not a vital factor.

Offers for shipment were heard in the neighborhood of $4.20 on a L/C basis. Considerable interest at this level was reported which would seem to be a reasonable one in view of the much higher quotations for spot and later May delivery. Compared with the lower grade Japan silks Cantons can still improve somewhat. Just now there is a differential in favor of them of around $1.00 a pound and while this is not quite so large as has been the case for several years, it is sufficiently great to permit some improvement in the relative position of the 14/16 grade.

Rayon Notes From Europe

(Special to TEXTILE WORLD)

HOLLAND

The dividend declared by the Dutch Enka Co. is at the rate of 20% as against 16% in 1926. It is understood that the capital of the company is to be increased by 16,750,000 florins.

* * *

The International Viscose Co. of Breda, Holland, are intending to increase, according to current reports, the capital of the concern from 10 to 25 million florins. The company controls the Dutch Breda, the French Soie de Valenciennes and the Spanish Deda de Barcelona. It is known that a considerable interest has recently been taken in these concerns by the International Holdings Co., but it is not known whether full control has been secured or not. It is reported that the Dutch Breda Co. is to take an active part in the production of acetate rayon. The profits of the Soie de Valenciennes have recently been declared at 90,667,006 Belgian francs against 7,721,169 Belgian francs.

GREAT BRITAIN

Exports of rayon hose during February totalled 77,479 doz. pairs against 62,858 doz. pairs in January and 52,909 doz. pairs in February, 1927.

* * *

The exports of manufactured goods are the highest yet recorded. Some advance details have now been received from which it appears that of the amount of £674,986 no less than £567,199 refers to exports of cotton and rayon mixtures and £45,406 to wool and rayon mixtures. New records have been set up in the cases of India, Canada, Ceylon and the Dutch East Indies. Other markets taking larger quantities of cotton and rayon mixtures in February were Netherlands, Egypt, Phillipines, China, Colombia, British West Africa, Brit-

In one year!

These exclusive features have, in one year, won a front rank position for **SASE**—the incomparable new spun yarn:

—*An incomparable softness that inspires its use alone, or with rayon, worsted, cotton and other fibres.*

—*A restrained lustre, imparting a silk-like sheen to fabrics.*

—*An evenness unequalled in any other spun yarn.*

—*A marked strength in the yarn, with elasticity.*

—*All put-ups, sizes and twist, for weaving or knitting, single or ply.*

SASE is a spun staple fibre of viscose base, manufactured under exclusive patents, and delivered ready for use without special preparation. It has been employed, alone or with other yarns, in a wide variety of fabrics, both woven and knitted. The mill and its Sales Agents cooperate fully with textile interests desiring to use **SASE** in their staple goods or novelty constructions.

Buyers: Ask your manufacturers what they are producing in **SASE**

¶ *Send for* BOOKLET K *descriptive of* **SASE**

This is the trademark of **SASE**—*the new spun yarn—owned and spun solely by Fitchburg Yarn Company*

FITCHBURG YARN COMPANY

ROBERT S. WALLACE, *Treasurer* Fitchburg, Mass.

CABLE ADDRESS: SASE—Fitchburg

Sales Agents

J. B. JAMIESON CO.
38 Chauncy St., Boston

E. W. DUTTON, INC.
25 Vanderbilt Ave., New York

TRACEY & BRADLEY
219 Chestnut St., Philadelphia

ROBERT D. FLOOD
222 West Adams St., Chicago

R. D. McDONALD
905 James Bldg., Chattanooga

Rayon and Silk Yarns—Continued

ish East Africa and Straits Settlements. Decreases, in cases slight, are shown by Australia, New Zealand, British South Africa, Argentine, Brazil, Venezuela, Central America, Cuba and the United States.

Quite the most popular fabrics are those containing from 40 to 50% of rayon. More fabrics with over 50% of rayon are now being exported than those with under 10%.

* * *

It is reported that Courtaulds have pooled with Coats, Wardle and Davenports and Listers some of the newer processes. Marked activity has been noticeable in the shares of all four companies.

Thrown Silk Dull

Demand Slows Up with Mills Seeking Substitute Constructions

Thrown silk was dull and the close selling that is being indulged in by cloth manufacturers was fully reflected in the yarn market. Mills find that there is a top level that they can get for goods and this top level seems slightly below the basis on which yarns can be sold by dealers even at the closest of margins. Even a willingness on the part of thrown silk houses to cut down on their already slim profit margin, did not result in any real buying last week except in the case of hosiery tram, possibly. Here some fair sized contracts were reported placed due to a willingness on the part of the seller to take a short position. Business in tram was reported booked for May, June, and July delivery.

Both sellers and buyers alike were searching around for ways and means to continue operating. China Steams in crepe yarns were still being sold cheaply and accounted for some business. Canton 14/16 in 3 thd was well bought, but hardly at a full replacement basis. The 3 thd could be bought around $5.30 to $5.35.

(60 days basis)

Japan Organzine, 2 thd. Grand XX in skeins..	$6 70
Jan Tram, 3 & 4 thd. in skeins.....	5 95
Japan Tram, 5 thd. on cones.....	5 90
Japan Crepe, 2 thd. Grand XX on bobbins....	7 00
Japan Crepe, 3 thd. Sp. Crack on bobbins....	6 70
Japan Crepe, 4 thd. Crack on bobbins.....	6 50
Canton Crepe, 3 thd. 14/16 on bobbins.....	5 40
Tussah Tram, 2 end on cops.....	2 75

Raw Silk Firm

Scarcity in Cantons and Better Quality Japans

In spite of slightly lower costs both in Japan and Canton raw silk prices held firmly in New York. A growing scarcity in warehoused quantities available for sale by importers was responsible for the strength noted. In the high grade Japans practically no quantities to speak of are available and while sellers will make contracts for Grand XX and Special Grands, laboratories are compelled to reject steadily, accepting 10 or 20 bales out of 100. The latter are taken in desperation when the mills need silk so badly that anything must be accepted. Canton 14/16 noted a sharp advance with spot lots almost unobtainable. Prices up to $4.50 were heard with little silk available even at this figure.

Mills are naturally operating cautiously in view of the high prices quoted and the difficulty in getting replacement costs. Only filling in buying is being indulged in by manufacturers and even this is being held at a minimum. Some sales of new season silk were reported to hosiery mills but prices discounted present market levels. Prices are as follows:

(90 days basis)

Japan Filature,	Grand XX.....	13/15	$5 95
Japan Filature,	Sp. Crack.....	13/15	5 65
Japan Filature,	Crack XX.....	13/15	5 50
Japan Filature,	XX.....	13/15	5 40
Japan Filature,	Best X.....	13/15	5 35
Japan Filature,	X.....	13/15	5 30
(20/22s selling at 20c discount)			
Canton Filature,	New Style.....	14/16	4 40
Canton Filature,	New Style.....	20/22	4 05
Tussah Filature,	8 cocoon.....		2 20

Textile Plants Help Celebrate Columbus, Ga., Centenary

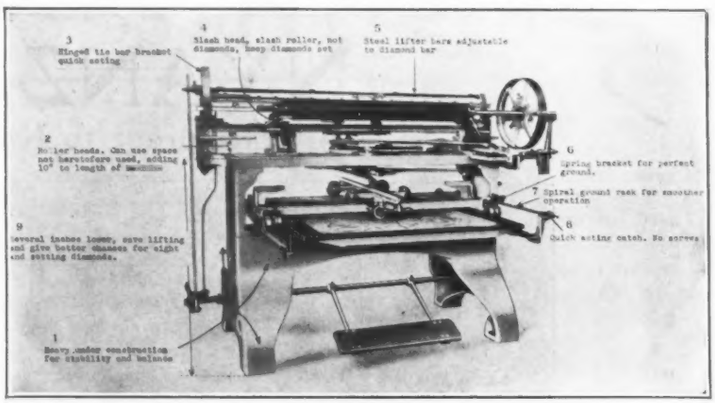
COLUMBUS, GA.—Cotton Mills and allied industries, which have played a leading part in the history of the city of Columbus, helped to celebrate its 100th anniversary on April 25, 26 and 27.

Every plant in the Chattahoochie region was closed while the executives and operatives joined with Governor Hardman and residents in marking the rise of Columbus from a trading post with the Cherokee Indians to the city having the second largest number of spindles in the South.

SUMMARY OF SILK CABLES

Saiyu-Yokohama	1375 Yen
Exchange at 3 m/s	48¼
Cost C. I. F. N. Y.	$5.24

The Yokohama market held unchanged throughout the whole of the week with transactions showing a falling off to approximately 2,800 bales. Prices were buoyed up by a decline of ½ point in exchange which moved off from 48¾ to 48¼. The decline in exchange follows several weeks of firmness during which period the Yen rate held at the highest of the year. The lower cost of silk due to the drop in exchange brought in slightly heavier buying on the last two days with 1,400 bales taken by exporters. A growing scarcity in high grade 13/15 and 20/22 silk is reported in cables and premiums have increased considerably. Premiums above 100 Yen have been paid for Cracks and Grand XX is almost unobtainable. Canton was weaker due to a rise in silver exchange which left the laid down cost nominally unchanged.


3
Hinged tie bar bracket quick acting
4
Slash head, slash roller, not diamonds, keep diamonds set
5
Steel lifter bars adjustable to diamond bar
2
Roller heads. Can use space not heretofore used, adding 4 10" to length of machine
6
Spring bracket for perfect ground.
7
Spiral ground rack for smoother operation
8
Quick acting catch. No screws
9
Several inches lower, save lifting and give better chances for sight and setting diamonds.
1
Heavy under construction for stability and balance

First with New Ideas in Printed Fabrics . . .

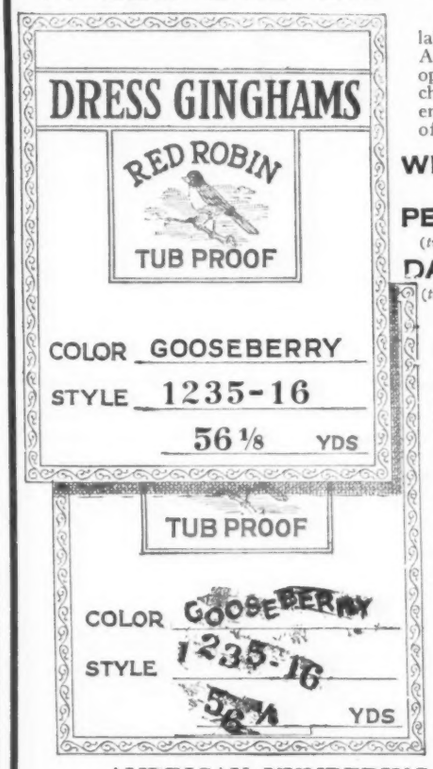
GIVE your fabrics new, original designs — printed, of course, for printed fabrics find themselves *the mode.* With a Glines Pantagraph Machine you can engrave your patterns exactly as you want them. And it's built for quality work . . . and for large production. It measures up to modern-day needs. *Write us today.*

WILLIAM S. GLINES

Entire Equipment for Engraving

214 Oxford St. Providence, R. I.

WHICH IS YOURS?



Color word on the *upper* label was printed with the new American Model 70, which operates like a numbering machine, but has 15 wheels, each engraved with all the letters of the alphabet.

WEATHERPROOFFAB
(one word of fifteen letters)
PERFECTION BLUE
(two words totaling fourteen letters)
DARK JADE GREEN
(three words totaling thirteen letters)

Construction is all-metal, self-inking, giving the fine clear appearance of printing. Wording may be instantly changed; combinations unlimited.

When used in combination with our geared machines for printing the style number and yardages, the effect is the acme of neatness and legibility.

Write for Booklet of our machines for The Textile Industry

Labels and Tickets are all too often like this; compare with one above.

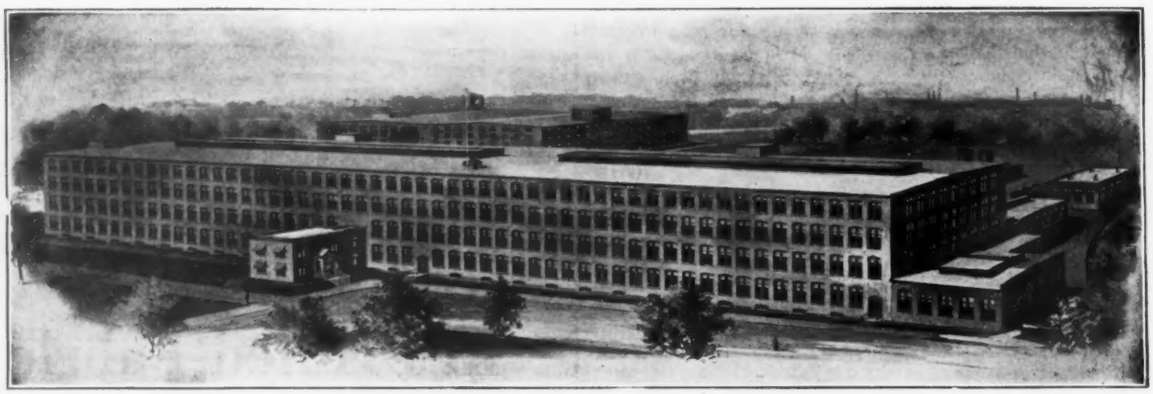
AMERICAN NUMBERING MACHINE CO.
224-230 Shepherd Ave., Brooklyn, N. Y.
***Branch:* 123 W. Madison St., Chicago**

John W. Farwell, Pres.
Nathaniel F. Ayer, Treas.

John G. Oswald, Gen. Mgr.
Forest Boyd, Sales Mgr.

NYANZA MILLS

Sell Direct to Knitters and Weavers



Combed Grey, Bleached, Worsted, Rayon and Cotton Mixtures
Single and Ply
American, Sakellaridis, Peruvian Cotton

General Sales Office, Woonsocket, R. I.
Branch Sales Offices
77 Franklin St., Boston — 40 Worth St., New York — Lafayette Bldg., Philadelphia, Pa.
Treasurer's Office, 77 Franklin St., Boston

Dyed & Natural — Raw & Thrown

RAYON

Cops—Cones—Spools

Prompt—Efficient—Reliable

BERGER RA'YARN CO.

57 East 11th Street
New York

Stuyvesant 2375
2376

Malina Company

RAYON

NATURAL and CONVERTED

6 West 18th Street New York

CHATILLON BRAND RAYON

NEW ARRIVALS OF 150 DENIER

Skeins with four tie bands, seven interlacings.

WINDING TROUBLES ELIMINATED

ASK for samples and quotation.

Sole Selling Agents and Distributors U. S. A.

59 Pearl St.
New York

ASIAM INC. Whitehall 8572-8389

MONARCH SILK CO.

MANUFACTURERS

Hosiery Tram and Combination Yarns

1424 NO. HOWARD ST., PHILADELPHIA

Rayon Waste

Regular Production, Standard Quality
Uniformity in Finished Product

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25 Vanderbilt Ave. New York City

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WOOL AND SUBSTITUTES

Cheaper Colored Stocks Do Better

Coarse Colored Knits Foreign and Domestic Moving — Mill Wastes Irregular

BOSTON.—Reworked wools seem more promising. Some plants are doing quite a lot of stripping of the various knits and getting very good results owing to improvements made in recent years in the production of more effective de-colorizing agents. Inquiries are generally more numerous and, later, business may result. Prices are firm on a level slightly lower than a month ago.

The long run on white materials is broken whether temporarily or more or less permanently has yet to be seen. Coarse foreign knits, blacks, greys, silver blues and off-whites are in good call. In domestic rags, blacks and blues in serges and worsteds are doing better and prices are pointing upward. Black serge is now higher-priced than blue serge by approximately 1c per pound. Black knits whether foreign or domestic are said to be selling around 14c. White stocks are relatively neglected.

Imports of rags and clips into the United States at the three principal ports of entry continue in a steady stream but the average price of these consignments is running lower than the general average price either of 1927 or 1926. The character of the imports seems to have changed somewhat and a large percentage of the material arriving is of relatively low-priced knit stocks. The average price of imports last year was around 32c but is probably nearer 25c for year to date.

The wool waste market continues rather slow. A number of sorts are being traded in in anticipation of larger mill demand in the near future. Prices are firm all along the line. In the Bradford English district the market is firm, but there is hardly enough business occurring to provide a real test of values. There is however a very general feeling that a revival in demand will be seen in the immediate future.

Supplies of good materials continue restricted. Prices on fine threads are not higher, if anything they are a trifle softer one house quoting 90-92c. Some of the importing houses have made a good clearance of materials purchased on a lower market near the beginning of the year but are now unable to do anything in a large way. Said an importer: "We are receiving more inquiries for fine threads but can barely make the cost on the import and our English house states that high prices are still current in Bradford with little or no indication of any easing off in values."

Fine Wool Advance Lags Behind

The Price Gain for Year to Date Has Been Approximately 5% While ¼ Blood Is Up 13%

Boston.

THERE is nothing much stirring in the Boston wool district. Wools of new clip are arriving slowly and sales are being made occasionally out of the very small spot lots of last year's clip available. Some small amounts of the old clip were disposed of at fair prices and one large accumulation of delaine wool, one million pounds it is said, was transferred at a figure well below the market, but as the matter of shrinkage was not divulged the clean cost of the material so purchased was probably near current clean price of such material of $1.18-$1.20.

Mills continue to show interest in the ¼ blood and ⅜s blood wool, the grading of which will have to await the arrivals into Boston. It can hardly be said that medium domestic wools are now relatively cheap as compared with fine wools. They were relatively cheap at the beginning of the year but have in the interim registered a much larger advance than fine wools. They are still cheap as related to foreign wools of similar grades and as additional supplies of the latter are months away the upward movement in medium domestic wool prices though checked for the moment has by no means terminated according to some good wool selling opinion.

Price is very much of a factor in manufacturing and as there seems little permanency in the character of the goods market demand substitution of slightly lower grades because cheaper is likely to be a feature of mill operations. Thus as a case in point the new clip Arizona wool on its high side is so good that it may probably take the place of high-priced Texas, which if growers' prices are paid by eastern buyers will lift the 12 months wool above the top level paid hitherto for domestic fine wools. The demand for the cheaper wools has brought about an upward movement in all grades below fine. Relatively, fine wool for months has been stationary while ½ blood, ⅜s blood and ¼ bloods have registered a strong upward price movement.

Quarter blood wools whether fleece, territory or pulled have shown the largest price advance in this market for year to date. Whether during the course of the next few weeks they will continue this rise is difficult of prediction and the only sure thing seems to be that wool growers in the several fleece states are asking very strong prices. The following table shows the price appreciation on Ohio wools for year to date:

	January 3	May 2	Advance
Delaine	47-48c	49-50c	4.2%
½ blood	47-48	50-51	6.3
⅜s blood	48	53	10.4
¼ blood	48	53½	11.4

It will be noted that in the above table the finer the wool and the less the price rise and this has also characterized the foreign markets.

The situation has been very similar in the territory wools, the French combing gaining 4.2% for year to date as compared with a gain of 15.1% made in ¼ blood 48-50s. The high ¼ blood 50s and the high ⅜s blood 58s have done quite as well if not better than the average grades. The following table shows the situation approximately:

	January 3	May 2	Advance
Fine staple territory	$1.10-$1.15	$1.17-$1.20	5.3%
French combing	1.05- 1.08	1.10- 1.12	4.2
½ bld. stap.	1.02- 1.05	1.12- 1.15	9.6
⅜s bld. stap.	.93- .95	1.05- 1.08	11.2
¼ bld. stap.	.85- .87	.98- 1.00	15.1

Wool and Substitute Quotations

(Corrected at close of business on Wednesday)

WOOL

Ohio, Pennsylvania and West Virginia

Fine delaine	49—50
Fine clothing	38—39
½ blood	50—51
⅜ blood	52—53
¼ blood	53—54

California (Scoured Basis)

Northern, 12 mo.	1.15—1.18
Southern, 12 mo.	.97—1.00

Texas (Scoured Basis)

Fine 12 mo.	1.16—1.20
Fine 8 mo.	1.10—1.20

Pulled—Eastern (Scoured Basis)

A.A.	1.15—1.20
A-Super	1.08—1.10
B-Super	.95—1.00
C-Super	.83— .87

Montana, Idaho and Wyoming (Scoured Basis)

Staple fine	1.17—1.20
Do. ½ bld.	1.12—1.15
Fine & fine medium	1.08—1.10
¾ blood	1.05—1.08
¼ blood	.97—1.00

Mohair—Domestic

Best combing	75—78
Best Carding	50—55

Mohair—Foreign (In Bond)

Turkey Fair average	46—48
Cape Firsts	48—50

Foreign Clothing and Combing (In Bond)

Scoured Basis—	
Canadian:	
Alberta F & F medium	1.10—1.12
Cape:	
Super 12 months	1.08—1.10
Super 10-12 months	1.02—1.05
Australian:	
70s	1.15—1.18
64s	1.02—1.05
58—60s	90— .92
Grease Basis—	
Montevideo:	
58-60s	54—55
56s	52—53
50s	50—51
Buenos Aires:	
48, 40—44s	37—38
58, 36—40s	35—36

Foreign Carpet (Grease Basis in Bond)

China: Combing No. 1	25—26
China Filling Fleece	23—24
Szechuen ass't	23—24
Cordova	24—25
Scotch Black Face	25—26
East India: Kandahar	37—39
Vican'r	40—44
Joria	43—48
Aleppo	36—37

SUBSTITUTES

Wool Waste

Lap—	
Fine white	1.25—1.28
Fine Colored	.92— .95
Thread White Worsted—	
Fine	.93— .95
½ blood	.85— .87
⅜ blood	.73— .75
¼ blood	.63— .65
Thread Colored Worsted—	
Fine Two-ply	.36— .37
½ blood, Two-ply	.30— .33
⅜ blood, Two-ply	.28— .30
¼ blood, Two-ply	.25— .28
Card—	
Fine white	.53— .57
Medium white	.35— .37

Old Woolen Rags

Merinos—	
Coarse light	6½— 7
Fine dark	4½— 5
Fine light	14 —15
Serges—	
Blue	6½— 7
Black	6½— 7
Red	14½—15
Knit—	
White	41 —42
Red	14½—15
Light hoods	20 —21
Worsteds—	
Light	7¼— 8
Blue	7½— 8
Black	6 — 6½

New Clip Wools Selling

Higher Prices Predicted on the Later Contracts

BOSTON.—Wool business in a large way on Summer Street is still a matter for the future although some of the newly arrived fine wools of the French combing type have been transferred to mills on a $1.10-$1.12 basis. The trade is trying to estimate the strength or otherwise of the fine wool situation. It is considered that medium wools will take care of themselves but there is some little doubt as to whether the fine wools will be able to advance to any higher selling level.

The wool market to date seems to be making fair prices on its early contracts but said a leading factor: "We will have to get more money on our later contracts." Wools in original hands in the West are being held for high prices and in Texas where approximately 20 million pounds are still unsold the situation is very similar. The Texas clip is around an average shrinkage this year but rather heavier than the previous season. Texas growers are asking around 42c for 8-months and 43-45c for 12-months wool.

During the past week advances of a cent a pound or more have occurred in grease ⅜s blood, ¼ blood and braid wools also in fine ½ blood and ¼ blood clothing. In the territory wools French combing and clothing ½ blood have also advanced with a marked

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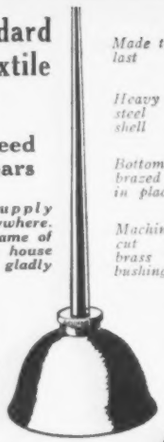

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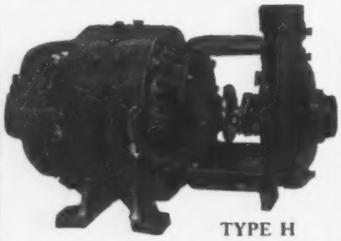
RONEY & RAE, Woonsocket, R. I.

PUMPS



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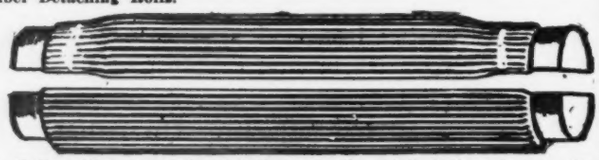

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Wool—Continued

gain in ⅜ blood clothing, ¼ blood clothing and low ¼ blood combing. The fine wool whether staple or clothing has been without change.

Recent sales of new wools in this market have been confined to small quantities of Arizona and even smaller quantities of Nevada and Southern Idaho. The Idaho wools running approximately ⅜s blood are selling at $1.03-$1.05 and on the ¼ blood up to 95c. Arizona sales have a wider price range the average quality bring $1.08-$1.10, down to $1.05 and up to $1.15 for particularly choice wool. In the fleece wool States poor weather is delaying shearing. As high as 45c has been paid on some of the medium fleeces.

The London sales of the third series open Tuesday next, May 8. A strong opening is regarded as highly probable particularly in the crossbreds. The general situation is summed up very concisely by an English authority who states "There is a very strong resistance from the raw material end to the efforts which are being made to depress values and an equally strong resistance from the distributive trade to the higher price which manufacturers are fully justified in asking. The struggle is keen and has restricted new business to a very small compass."

Boston Wool Receipts

Receipts of domestic and foreign wools at Boston also imports at Philadelphia and New York for the week ended Apr. 28, based upon data compiled by the Market News Service of Bureau of Agriculture Economics, Department of Agriculture, are as follows:

	Week Ended April 28	1928	1927
Domestic	1,465,000	27,773,000	28,100,000
Foreign	4,102,000	51,460,000	68,179,000
Total	5,567,000	79,233,000	96,279,000
IMPORTS AT PRINCIPAL PORTS			
Boston	4,102,000	51,460,000	68,179,000
Philadelphia ..	789,000	20,018,000	30,144,000
New York....	920,000	21,006,000	23,978,000
Total	5,811,000	92,484,000	122,301,000

Middle West Stronger

Growers in the Fleece Sections Advance Quotations

PHILADELPHIA.—Although trading in spot wools is restricted by lack of supplies in dealers' hands, sufficient has been sold during the week to indicate there has been no easing of prices as compared with sales several weeks ago, fair sized trades being reported, for example, in last year's fleece wools at 53c for bright quarter blood which represents the top prices paid this year for wool of this type, which would mean a clean cost of around 94c, 100,000 lbs. being moved in this sale. While there are few in the trade predicting lower prices for medium wools in the near future it is apparent a more conservative feeling is held in regard to further advances and the result of this change has been manifest among spinners in this section, it being reported they are buying new wools in the middle West less actively than was noted several weeks ago.

Dealers More Conservative

A similar trend has been evident among a number of dealers who have changed their viewpoint on the future course of wool prices, a number who several weeks ago were predicting that medium wools would continue to advance now believe no mistake will be made to sell remaining wools at the present price range, several of them now believing an easing may occur when new wools come into the eastern markets in volume. This is particularly so, in their opinion, in view of the lack of satisfactory business among manufacturers in most lines in this vicinity, mills claiming that they not only are unable to sell in volume but they have been unable to sell goods at prices based on higher wool level and should this condition continue during the next few months a number of wool dealers believe an easing of wool prices will take place when larger supplies are available from the new clip.

Dealers state growers in the fleece sections are quoting them 45c for bright wools and in Ohio higher figures are being asked. Trading this year started around 38c in the fleece sections and recent figures indicate growers have advanced their ideas to date seven or more cents. During the last two weeks dealers have found many sections of the middle West to have raised prices on new clips from 42c to 45c, and while trading in new wools has been less active during the last few days there has been no lower trend in the country so far as prices are concerned, one dealer reporting a 48c price from owner in Ohio this week. In comparing these prices with the spot market it may be remembered that sales of bright quarter blood have been made here this week at 53c.

Spot Grease Wools Lacking

There is little trading in spot territory wools in this market at present, dealers having sold the small lots of new wools that arrived several weeks ago and have not received important further shipments due to the fact shearing in the West was delayed for three weeks by unfavorable weather conditions in those sections. Local dealers have sold a considerable percentage of their contracts in new territory wools to manufacturers and many in the trade who are predicting current prices will not be maintained point to what may be implied from this, that manufacturers and not dealers themselves would stand to lose most by a decline in the general market this season.

Although there has been a larger demand for pulled and scoured during the last week trading in these wools cannot be termed active, sales being small as result of lack of suitable wools remaining in dealers' hands and also because manufacturers are refusing to pay current quotations unless a mill finds a particular lot that it must have for immediate consumption.

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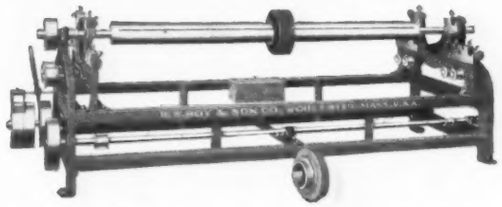

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DYESTUFFS AND CHEMICALS

Textile Chemists Meet in Chattanooga

The spring meeting of the South-Central Section of the American Association of Textile Chemists and Colorists was held at the Hotel Patten, Chattanooga, Tenn., Saturday of last week. The program included dinner, addresses by authorities in the field, and the showing of a motion picture on the manufacture of dyes.

Philadelphia Quartz Company Moves Chicago Office

The Philadelphia Quartz Co., manufacturers of silicates of soda, have announced the removal of their Chicago offices to new and larger quarters in the Engineering Building, 205 West Wacker Drive on May 1. The new telephone number is State 7734. Carl F. Wolcott, field assistant sales manager, who is in charge of the Chicago branch office, also announces the recent addition of Warde C. Cookman to the city sales staff.

Sheplan, Sabul & Palmer Inc., Philadelphia, Pa. A first and final dividend of 25.12% will be paid in the near future to the general creditors of this firm, manufacturers of neckties, mufflers, etc., 15th & Wallace Sts., from a fund of $40,074 which is available as result of sale of assets of the company to Chas. Delaney, several months ago for $49,000. B. K. Wolfe and Melville Boyd were appointed receivers of the company Aug. 6, 1927.

Real Purpose of Bleacher, Dyer, Etc.*

Cooperation Necessary Between Mill Men and Manufacturers of Dyes, Etc.

By D. C. Newman

Assistant Manager, E. I. DuPont de Nemours Co., Charlotte, N. C.

ALL of you have the daily routine of keeping production up to the maximum (meaning of course when business is good). The bleacher is using every effort to produce a piece of white goods better than that of any competitor. The mercerizer is striving to obtain a superior gloss on his yarn or piece of goods. The dyer is endeavoring to duplicate a desired shade and have the results perfect in all respects, while the finisher is using every art at his command to turn out a piece of goods with real character. At the same time the manufacturers of chemicals and allied products are devoting their energies in research to improve the products now made or to produce entirely new ones, which may make your task simpler and as a natural result create sales for this commodity. Engineers of machinery works are always trying to improve mechanical details and bringing out entirely new machines with the same purpose in view.

How many of us, during the hustle and rush of our daily work, ever stop to think what the real purpose of our duties is and what it is all about? A few thoughts that the writer had along these lines are the object of this paper.

Influence of Color

First of all, let me ask one question for you to think over for just a moment. Have you ever seriously thought just what the world would be like without artificial coloring? Just take a look at those things which we accept as part of our daily life. Look at your suits, socks, shoes, neckties and think what the effects (some of which we admit are almost too brilliant) would resemble if it were not for artificial coloring. Even those of you who are wearing uncolored shirts could not call them white if it were not for bleachers, mercerizers, finishers, and the use of machinery, chemicals, and bluing agents. Furthermore, when we step into a room or for instance a hotel lobby that seems to attract us, if you have ever stopped to figure out just why it is attractive, nine out of ten would say that it is due to the color or blending of colors in all of the furnishings. Without artificial coloring matter, your paints, your furniture, your textiles and even the ladies' complexions would lack real life.

The Bleacher

You may think that so far this paper is showing partiality to the dyer, but think for just a minute. Each one of you four groups is playings an equally important part in conjunction with the manufacturers of textile machinery, chemicals, dyes, and other products. Take the bleacher, for instance. You may wonder where he fits into the color scheme, but I personally consider a white—or rather whites—a definite shade, and I believe there are as many varieties in whites as in any other color. Anyway, I consider white as a definite shade; and as to the difficulty of producing a good white, I think that a good lively stunt for the group meeting would be a debate between the bleachers and dyers, letting them fight it out for once and all as to the comparative ease of obtaining an exact match on a shade of white and a shade of light tan or dark brown.

Furthermore, the function of the bleacher in the color scheme does not end here. There are any number of bright shades that the dyer is unable

* Paper presented at recent meeting of Bleachers, Dyers and Finishers Division of Southern Textile Assn.

Miscellaneous Chemicals

Aluminum Sulp. com..	1 40	—	1 60
Iron Free	2 00	—	2 05
Alum, Ammonia Lmp..	3¼	—	....
Potash, Lump	2¾	—	3⅛
Ammoniac, Sal. white gr., dom.	4¾	—	5
Bleach powder, per 100 lb. works	2 00	—	2 50
Blue Stone	5	—	5¾
Calcium Arsenate	6½	—	7
Chlorine, Liq. Cylinders	5½	—	9
Tanks	3½	—	3¾
Copperas, ton	13 00	—	18 00
Cream of Tartar	25½	—	27
Epsom Salts, 100 lb..	1 75	—	1 90
Formaldehyde Spot	9	—	....
Glauber Salts, 100 lb.	75	—	1 15
Glycerine (C. P.) bbls.	16½	—	17
Cans	18	—	18½
Yellow Crude	16	—	16½
Hydrosulphite Conc....	23	—	25
Lead—Brown acetate.	12	—	12½
White (crystals) ...	13	—	14
Lime, acetate, 100 lb.	3 50	—	....
Potassium—Bichromate	8	—	8½
Chlorate crystals...	8	—	9
Permangan, tech....	15	—	15½
Sodium acetate	6	—	....
Bichromate	6½	—	6¾
Bisulphite, 35%....	1 50	—	1 75
Nitrite	7½	—	8¾
Phosphate	3¼	—	4
Prussiate, yellow...	11½	—	12
Sulphide, 60% fused	3½	—	3¾
30% crystals	2⅝	—	2⅝
Tartar emetic, tech....	29	—	....
Tin—Crystals	38	—	....
Bichloride, 50 deg..	15½	—	....
Oxide, bbls.	57	—	....
Zinc Dust	8	—	10

Acids

Acetic, 28% per 100 lb.	3 37½	—	3 62½
Citric crystals	44½	—	45½
Formic, 90%	11	—	12
Lactic, 22%	5¼	—	6½
Muriatic, 18 deg. per 100 lb. in tank cars.	95	—	1 00
Nitric, 36@42 deg. per 100 lb.	5 00	—	6 75
Oxalic	11	—	12¼
Sulphuric, 66 deg. per ton in tank cars...	15 50	—	....
Tartaric	36	—	37

Alkalies

Ammonia, Aqua, 26 deg.	2½	—	3¼
Borax, Crys. bbls.....	4	—	5
Potash, carbonate, 80-85%	5¾	—	6½
Caustic, 88-92%....	7⅛	—	7½
Soda Ash, 58% light..	1 37½	—	2 44
Contract, 100 lb....	1 32½	—	1 57½
Bicarb, per 100 lbs.	1 90	—	2 25
Caustic, 76% per 100 lb.	3 75	—	3 90
Contract, 100 lb...	2 90	—	....
Sal. 100 lb.	90	—	1 00

Natural Dyes and Tannins

Fustic: Crystals	18	—	22
Liquid, 51 deg.....	8	—	10
Gambier, liquid	10½	—	11
Hematine, crystals ...	14	—	18
Hypernic Ext.—51 deg.	11	—	15
Indigo—Madras	1 30	—	....
Logwood Extract, liq. 51 deg.	7	—	8½
Crystals	14	—	18
Osage Orange, Extract, 51 deg.	7	—	7¼
Quercitron extract, 51 deg.	5½	—	6
Sumac, Ext. dom., ref., 51 deg.	5½	—	6½
Extract, stainless ..	10	—	11
Tannic Acid, tech....	35	—	40

Dyestuffs and Intermediaries

Alpha Napthylamine..	32	—	34
Aniline Oil	15	—	16¼
Salt	24	—	25
Beta Naphthol sublimed	50	—	60
Technical	22	—	24
Dimethylaniline	31	—	32
Metaphenylene Diamine	84	—	....
Paranitraniline	52	—	53

Oils and Soaps

Castor Oil, No. 3.....	13	—	15
Olive Oil, denatured, gal.	1 25	—	1 40
Foots	10	—	....
Red Oil, lb.	9	—	10½
Stearic Acid double pressed	12	—	12¾
Turkey Red Oil, 50%.	9	—	10

Adhesive and Sizing Materials

Albumen, blood domestic	45	—	55
Dextrine-Potato	8	—	9
Corn, bags 100 lb..	4 27	—	4 47
Gum, British, 100 lb..	4 52	—	4 72
Sago flour	4½	—	5½
Starch, corn, 100 lb..	3 47	—	3 67
Potato	6	—	7
Rice	9	—	9½
Wheat	6½	—	10
Tapioca flour	3½	—	5½

Coal Tar Dyes

Direct Colors—			
Black (H-acid).....	28	—	52
Black Columbia FF.	50	—	60
Blue, 2 B.	24	—	32
Blue Sky, ordinary..	45	—	90
Blue, 2 GL.	1 70	—	2 50
Blue, 4 GL.	1 60	—	....
Blue Sky, FF.	60	—	1 20
Blue, Fast RL.	1 90	—	....
Blue, Solamine	2 00	—	....
Benzo Azurine	90	—	80
Brown, C.	40	—	60
Brown, M.	70	—	90
Brown, Congo G....	85	—	....
Brown, Congo R....	80	—	....
Green, B.	60	—	90
Green, G.	65	—	90
Orange, Congo	60	—	....
Orange, Fast S.....	1 80	—	....
Red, Fast F.	80	—	90
Red, Congo	40	—	50
Benzo Purpurine, 4 B.	40	—	60
Benzo Purpurine, 10 B.	1 25	—	1 50
Scarlet, 4 BA.	1 50	—	....
Scarlet, 4 BS.	1 45	—	....
Scarlet, 8 BS.	1 25	—	....
Scarlet, Diamine B..	1 65	—	....
Violet N.	1 10	—	1 20
Yellow chrysophenine	50	—	1 50
Yellow, Stillbene ...	90	—	95
Developing Colors—			
Black, BH	40	—	60
Black Zambesi	....	—	90
Bordeaux, Dev.	2 00	—	....
Orange, developed..	2 50	—	....
Primuline	1 00	—	1 15
Red, Dev. 7 BL....	2 50	—	....
Scarlet, Dev.	2 50	—	....
Sulphur Colors—			
Black	20	—	31
Blue, cadet	90	—	95
Blue, navy	50	—	60
Brown	37	—	60
Green	85	—	1 50
Green, olive	25	—	50
Yellow	45	—	1 40
Basic Colors—			
Auramine	90	—	1 30
Bismark Brown ...	50	—	60
Chrysoidine	40	—	65
Fuschine crystals...	1 50	—	1 75
Malachite green ...	1 35	—	....
Methylene blue	1 00	—	1 40
Methyl violet	90	—	1 15
Rhodamine B, excone	5 00	—	6 00
Safranine	1 45	—	1 60
Victoria Blue B....	3 10	—	....
Acid Colors—			
Naphthol blue blk..	47	—	60
Napthlamine black, 4 B.	50	—	55
Alizarine saphirol...	2 35	—	4 00
Alkali blue	3 25	—	3 50
Indigotine	80	—	1 30
Induline (water soluble)	75	—	80
Soluble Blue	3 00	—	3 75
Sulphoneyanine	1 00	—	....
Sulphone Blue R...	60	—	95
Patent Blue A.....	2 50	—	....
Rescorcin brown ...	80	—	90
Guinea green	1 00	—	2 20
Wool green S.....	84	—	1 70
Orange II	27	—	....
Orange GG crys....	60	—	....
Acid Fuchsine	80	—	90
Azo eosine G.....	65	—	82
Crocein scarlet	1 15	—	1 90
Fast red A.....	50	—	65
Azo yellow	1 35	—	1 40
F. Light Yellow, 2 G.	1 40	—	....
F. Light Yellow, 3 G.	1 50	—	....
Naphthol, yellow ...	1 35	—	1 40
Chrome Colors—			
Aliz, Black B.....	1 80	—	....
Diamond Black PV.	70	—	....
Chrome Blue Black.	45	—	....
Chrome Brown	60	—	1 80
Chrome Green	75	—	1 50
Chrome Yellow	45	—	1 10
Indigo—			
Synthetic 20% paste	15	—	17

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Type V-M
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See also CONSOLIDATED TEXTILE CATALOG

SOL-ESCO
the Kier Boiling Detergent

With a variety of goods going into your kiers, the detergent or boiling-out problem becomes of considerable importance. *Light and heavy goods, colored stripes and rayon patterns* demand a combination of strength and control in the boiling process which has hitherto never been available. Furnishing the qualities lacking in caustic soda and soda ash, SOL-ESCO is the scientific choice among detergents. The appearance of yarn and piece goods boiled with SOL-ESCO is recognized as *Quality*. The smooth surfaced fibres hold a permanent white. And SOL-ESCO is economical, too. Ask to have a Cowles Technical Man call and fully explain SOL-ESCO and its uses.

The Cowles Detergent Company
7016-40 Euclid Avenue Cleveland, Ohio

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LOWELL CRAYON COMPANY
Lowell
Mass.
Original Manufacturers

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A geared type "*Hy-Speed*" mixer for stirring pastes, soaps, dyes, starch, sizings, gum solutions and other ingredients in smaller tanks. Other mixers for tanks up to *50,000 gallons* capacity.

Mix All Liquids in ANY Tank
Write for Catalogue

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POTASH FIG SOAPS
for Woolens and Worsteds made with
Red Oil Olive Oil
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TEXTILE SOAPS
MADE IN PAWTUCKET, R.I.
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Palm Oil
Curd SOAP
Olive SOAP
Chips or Bars
Soap Powder
For Mill Floors

Established 1860. Incorporated 1905 LET US SUPPLY YOU

For Sticking to Iron
Stop the Slip!

—by covering your pulleys with leather or cloth. Use Ament's Glue and you will need no rivets. Satisfaction guaranteed

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See also CONSOLIDATED TEXTILE CATALOG

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Low in Cost
High in Efficiency
STANDARD ENGINEERING WKS.
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MANUFACTURERS OF
Textile, Laundry and Special Soaps
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EST. 1854
R.D. COLE MFG. CO.
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TANKS · TOWERS · STANDPIPES
BOILERS · KIERS · CASTINGS
MONEL METAL TANKS

"Tetrakierol"

Recommended for properly boiling out and bleaching goods containing rayon and colored yarns. . . .

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Onyx Oil & Chemical Co.
Jersey City, N. J.

If you do not Find what you want
in the Textile Clearing House Department of Textile World
then advertise for it.

Dyes and Chemicals—Continued

to produce without the bleacher's aid, by turning over to him a skein, warp, or piece of goods from which the bleacher has removed the drab and dull grayish-yellow appearance. Take a glance at the colored stripes in your shirts and realize that these colors would not stand out half so brilliantly had not the bleacher produced a shade of white for a contrast.

The Mercerizer

Now we come to the mercerizer, the man who takes the ordinary lifeless skein, warp, or piece of cotton goods and transforms it into a glossy, shining piece of material that enhances its looks to a wonderful degree. His principal part in giving color to the world is to obtain more luster for the white shades and pass along to the dyer this bit of more lustrous cotton, which adds to the beauty of the color.

The Dyer

When it comes to the actual selection by the final buyer of the fabric, the construction is of course considered; but when two fabrics are of the same quality the color or blend of colors sells the goods. I might even add that in some cases an attractively colored pattern may sell a piece of goods of inferior construction. At the present time designers of fabrics are using all their artistic ability to produce new shades on solid fabrics and striking patterns on woven goods in order to attract the buying public. It is, then, the dyer's task to duplicate the shades contained and in this way produce the desired harmony of colors. The bleacher and mercerizer have finished their task, and it is up to the dyer.

The modern dyer has the knowledge and selection of thousands of types of dyestuffs, hundreds of chemicals, oils, wetting-out agents, and other dyeing assistants at his command. Through proper selection of these materials, taking all specifications into consideration, the dyer turns to his job of producing color, knowing that a noticeable variation from any one of the desired shades may spoil the entire effect of the whole pattern.

The Finisher

The final work of producing color is done, as the name would imply, by the finisher. By his familiarity with various finishing agents, he is able to improve the feel of the fabric and obtain more character on the goods. This in turn makes the color more pronounced and in most cases adds life. And remember, the finish may spoil or make the combined work of the bleacher, mercerizer, and dyer.

We shall now discuss for just a moment how the color which yor are producing is appreciated. Have you stopped to realize how in recent years the demand for color has been increasing? It would seem as though the world has actually become hungry for color. It is easily noticeable as you glance around you on an everyday walk on the streets. It has not been many years since the standard colors for automobiles were dark, dull shades of black and navy blue. Now they are every color of the rainbow. Study the window display of any dry goods store. The entire scheme for attracting the eye of the passer-by is based on color.

So, gentlemen, there is your real purpose. The world is demanding color, for, as stated above, color makes life interesting and attractive; and bear in mind the fact that you, the bleachers, mercerizers, dyers, and finishers, are the real producers of color on textiles.

You can place in a mill the finest piece of machinery ever made, but by itself it can not mercerize a piece of goods. At the same time, color can not be produced by simply making a barrel of dyestuff and standing it in the dye house along with the necessary chemicals. I requires the skillful use of the experienced man to obtain the results. And remember, you four groups who make up this organization are the real producers of color.

Cooperation with Manufacturers

Now just a glance at the other side of the picture. Have you ever stopped to think how closely allied you are with the manufacturers of machinery, chemicals, and similar products? In the first place, take your bleaching agents away from the bleacher, machinery from the mercerizer, dyestuffs and chemicals from the dyer, and finishing pastes and oils from the finisher, and you would have one sweet time.

We pointed out a few minutes ago how you four groups of the producers of color are dependent upon each other. Exactly the same thing applies to those of us who supply your commodities. In the first place, there would be no dyestuffs without chemicals. Hydrosulphite would be a drug on the market if there were no manufacturers of indigo and vat colors. At the same time, the best sulphur black on the market (and you have all been told that every manufacturer's is the best) would hardly be worth a cent a pound if no one made sodium sulphide. So, gentlemen, you see all of us form a closed circle, with each one of us absolutely dependent upon the other.

Now, there is one more point I want to bring to your attention, for I believe this one thing is the real aim of our branch of the Southern Textile Association.

You producers of color have your problems; we the suppliers of the necessary materials have ours. We have one common aim. Therefore our problems are your problems and your problems are our problems. We believe that you can help us and we in turn should be able to help you, and it should prove of mutual benefit. But this can only be done if these problems are brought to the surface.

I believe that every firm that manufactures supplies and is represented here today will be only too willing to cooperate. So why not all of us get together and in this way bring color to the world and at the same time make life brighter for all of us?

"Avoiding The After Effects

of alkalies on fabrics is a matter of the solubility and free rinsing of the alkali itself," said a mill superintendent.

This is why hundreds of mill operators prefer the

Wyandotte
Quality and Service
Textile Alkalies

They are so perfectly soluble and so absolutely free rinsing that no staining or tendering of fibres can result.

Moreover, the absence of impurities and the scientific care in manufacture guarantees you 100% work from every grain in the barrel.

Ask your supply man or write

THE J. B. FORD CO.
Sole Manufacturers
Wyandotte, Michigan

ATTEND THE ANNUAL N. I. A. A. CONFERENCE AT ST. LOUIS

June 11th, 12th and 13th

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You will get worth while ideas from men who are putting over successful industrial sales and advertising campaigns. This is the largest business gathering of the year of industrial sales and advertising men. It is truly a business meeting where all who attend come to learn and give ideas. Great strides are being made in industrial advertising. This is the clinic.

The theme of this meeting is

"Can Industrial Advertising Lower the Cost of Industrial Sales — and How"

Learn how others are improving their work. See the large array of exhibits and campaigns that have produced results. Hear the talks of the leading men in industrial sales and advertising work. Swap ideas with the other fellow. All who attended the Cleveland convention last year know the value of attending this annual business conference.

The entire conference and exhibits will be in the Hotel Chase. Send in your reservations now. Enter an exhibit of your work. Get rates and complete information from H. von P. Thomas, Secy.-Treas., care of Bussmann Mfg. Co., University at Jefferson, St. Louis, Mo.

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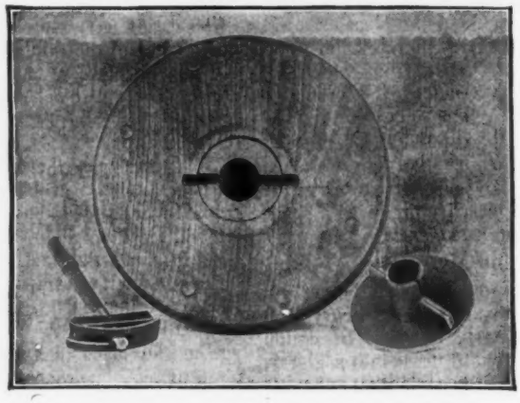

A Practical Jack Spool

The Head Cannot Turn or Fly Off

Notice the construction of the washer. The feather fits tightly into a slot in the head and barrel preventing the head from turning or coming loose.

There are no threads on tennon to strip; if the head breaks leaves good end for new heads. The head is three ply hardwood—guarantees strength and freedom from warping, splitting and breakage.

Long tapered stud fitted to tapered hole prevents gudgeon from wearing hole and becoming loose.

Extra long oblong nut cannot be drawn into wood or become loose.

Spring lock keeps gudgeon tight.

Write today for trial proposition.

VERMONT SPOOL & BOBBIN CO.
Burlington, Vermont

See also CONSOLIDATED TEXTILE CATALOG

Up to Date Bobbins!

Bring your bobbins up to date — put on Anderson metal shields — then note your savings. Keep pace with the Automatic Loom. Demand ***protected*** bobbins.

Note

At left—An unprotected bobbin
At right—A modern bobbin guarded by

The Shield of Protection

TEXTILE SHIELD CO.
Metal Stampings & Screw Machine Products
LAWRENCE, MASS.

Obituary

(*Continued from page 83*)

of 5,000 spindles, the product being carded yarns. He was the last of the original directors of this concern to survive. In 1897 the equipment of the Barlow & Thatcher Spinning Co., Wilmington, Del., was purchased, consisting of about 5,000 spindles, which brought the total to 15,000 spindles. In 1902 the company erected Mill No. 2, which was equipped with 10,000 spindles for making combed Egyptian yarns and in 1916 another addition was built. In 1920 the third mill was constructed, bringing the total equipment at that time to 60,000 spindles.

The second factor in the group was the Standard Processing Co., which was established at Chattanooga, Tenn., in 1912, for the purpose of mercerizing yarns spun at the Coosa plant. Initial capacity of this plant was 20,000 to 35,000 lbs., weekly of mercerized yarns on cones. It became necessary from time to time to increase the capacity of this plant also and within a comparatively few years it was turning out more than 200,000 lbs weekly. They later added additional equipment for the gassing of yarns with a weekly capacity at that time of 35,000 lbs.

In 1916 the first mill of the Thatcher Spinning Co., was placed in operation adjoining the plant of the Standard Processing Co., at Chattanooga, Tenn., the mill being equipped with 15,000 spindles for the production of combed yarns and in 1919 it was found necessary to increase this to 30,000 spindles. In 1920 Mill No. 2 was erected bringing their spindles in this plant to a total of 50,000 on combed yarns for mercerizing purposes. Since that time further expansion in all plants of the corporation have been made. The remarkable history of the company and its growth reflects the life work of Mr. Thatcher.

Besides his widow he is survived by five sons, William and Charles, of Swarthmore, Pa., Herbert, Richard and Albert of Chattanooga, and one daughter, of Glen Mills, Pa.

Henry L. Scott

Henry L. Scott, president of Henry L. Scott Co., Providence, R. I., manufacturer of testing machines, died April 27 following an operation at the James Brown Hospital in Providence. His death was a shock to his many friends, particularly since he had been present at part of the sessions of the convention of the National Association of Cotton Manufacturers two days prior to his death. Mr. Scott had been in poor health for the last two years.

Born in Providence Oct. 27, 1878, he was educated in the public schools of that city and attended Brown University as a special student for one year. In 1899 he went into business with James A. McHardy as James A. McHardy & Co., but a few months later dissolved the partnership and started as Henry L. Scott & Co. In 1905, his brother, David C. Scott, joined with him as a partner and the concern continued as a partnership until Jan. 1, 1926, when it was incorporated as Henry L. Scott Co., with Henry L. Scott as president and David C. Scott as secretary and treasurer.

Mr. Scott's main interest lay in the field of invention and he was responsible for many important developments in connection with testing apparatus. However, he also showed exceptional ability as an organizer, financier, draftsman and mechanic. His ability to make friends was an outstanding characteristic.

Although Mr. Scott belonged to a large number of organizations, his chief interest lay for many years in the American Society for Testing Materials and particularly in Committee D-13. He at one time served on the executive committee of the society and several times refused election to other offices. He was also a member of the American Society of Mechanical Engineers, American Cotton Manufacturers Association, National Cotton Manufacturers Association, Providence Engineering Society, Southern New England Textile Club, Providence Chamber of Commerce, Textile Institute of Manchester, England, and the Technical Alumni Association of Providence.

Masonically, he was a member of Mount Vernon Lodge No. 4, Providence Royal Arch Chapter No. 1, Providence Council No. 1, St. John's Commandery No. 1, the four Scottish Rite bodies of Providence, and Palestine Temple A. A. O. N. M. S. He also belonged to the Shrine Club, the British Club, the Republican Club, the Rhode Island Yacht Club, and was a director in the Providence Club of the American Soccer League.

He is survived by his widow, Bertha Angell Scott, whom he married in 1912, and by one child, Ruth Angie Scott, 12 years old.

The loss of its president is a serious one to Henry L. Scott Co., but technically his death will not interfere with the operation of the concern. Owing to his poor health during the last two years, the management has been adjusted to the situation and the company will continue without interruption or change in policy.

J. Howell Cummings

Colonel James Howell Cummings, president of the John B. Stetson Co., Philadelphia, who had been ill for more than a month, having undergone an operation in the Stetson Hospital, died April 28 in his 61st year. Colonel Cummings had been ill at his apartment, 19th & Walnut Sts., for more than a month and recently entered the hospital where his condition became acute, when the operation was performed. Besides being known throughout the world as a manufacturer of hats, Colonel Cummings was one of the civic leaders of Philadelphia, taking part in movements of this character for many years. He was born in Goshen, Lancaster County, Aug. 7, 1867, the son of John and Sarah E. Thompson Cummings and received his education in the public schools of Philadephia, being graduated from this institution when he entered the employ of the Stetson Company as an office boy. By successive promotions he rose to be assistant manager and in 1891, when the firm of John B. Stetson Co. was incorporated Mr. Cummings was elected secretary of the new concern. He was later advanced to the position of treasurer and second vice-president. Following the death of Mr. Stetson on Feb. 18, 1906, Mr. Cummings was chosen to succeed him as president of the corporation and in that capacity he continued to direct the affairs of this unique concern until the time of his death, becoming as well known in foreign countries as in the United States. He traveled extensively on business and pleasure in Mexico, South America, Canada and other countries where the company is represented. He was a member of the Union League, vice-president of the Manufacturers' Club, a member of the Poor Richard Club, Philadelphia Country Club and the Lotus Club of New York. In addition to his other offices Mr. Cummings was president of the John B. Stetson Building and Loan Association, of the Stetson Hospital and the Belle Alto Farms, Inc. He was trustee and executor of the estate of John B. Stetson, one of the trustees of the Penn Mutual Life Insurance Co., and a director of many industrial concerns, including the Erben-Harding Co.

Thomas J. Golden

Thomas James Golden, one of the most widely known factors in the mercerized yarn trade, who has been associated with the Aberfoyle Mfg. Co., for more than 18 years, died suddenly April 28, 1928, in his apartment 19th & Walnut Sts., Philadelphia. He was 41 years of age.

Thomas J. Golden

His death came suddenly and unexpectedly as Mr. Golden had been at his office in the Bankers Trust Bldg. upon the day of his death, and friends in the hosiery and underwear trade remembered seeing Mr. Golden actively engaged during the week of the Knitting Arts Exhibition in Philadelphia, when he appeared to be enjoying good health. He was undoubtedly one of the best known representatives calling upon the knitting trade and his circle of friends was one of the largest. Mr. Golden was senior salesman for the Aberfoyle Mfg. Co., having sold their mercerized yarns in Pennsylvania and Philadelphia for more than 18 years. He enjoyed the reputation of being one of the best salesmen in the trade and his opinion on market trends was valued by his many friends in the hosiery and other fields. Mr. Golden was born in Shamokin, Pa., Oct. 6, 1887, coming to Philadelphia to make his home when a young man, when he entered the employ of the Aberfoyle Mfg. Co. He was a member of the Manufacturers' Club, the Wyomissing Club of Reading, Pa., Reading Country Club, Elks Club of Philadelphia. Surviving him are his widow, Helen Griffin Golden, his parents, Mr. and Mrs. James Golden, who also make their home in Philadelphia, and a brother, Edward F. Golden, who is connected with the sales organization of the Aberfoyle Mfg. Co.

R. Craven Bridger

R. Craven Bridger, chairman of the board of the Bladenboro (N. C.) Cotton Mills, Inc., died Friday, April 27, at the University Hospital, Philadelphia, following an operation. Mr. Bridger, who was only forty-one years of age, was a prominent factor in the control of the various interests of this well-known textile family. Following the death of his father, H. C. Bridger, the founder of the mill and of the town of Bladenboro, as the oldest son, he assumed active management of their various interests in the spinning mill, the cotton ginning plant, cotton seed oil mill, etc. In this capacity he was naturally widely known, and was generally recognized because of his business and financial ability. His untimely death is therefore regarded with deep regret as it was felt he was destined to assume an important place in the industry. Mr. Bridger was also a prominent layman in the Presbyterian Church where he also played a very active part. He is survived by his widow and four children. The active management of the Bladenboro Cotton Mills will continue as formerly under the direction of his brothers, J. L. Bridger, general manager and C. O. Bridger, secretary and treasurer.

H. M. Stockton

H. M. Stockton, well known for his many years' association with the selling end of the woolen industry, died last week at his home in Plainfield, N. J., of heart disease. Until recently Mr. Stockton had given no evidence of illness and since the retirement of H. M. Stockton & Co., on December 1 he had continued in good health. He was about 72 years of age. He began his long and successful career in the woolen and worsted industry, in 1872 as a boy, with Cadbury, Thomas & Co., of Philadelphia, leaving that firm six years later to become identified with their New York associates, Knower, Haines & Thomas. He was later associated with Rockefeller & Shepherd, and in 1881 he became direct sales representative with Harris Woolen Co. He remained with them until they retired from business. In 1896 he founded the firm of Stockton & Drowne, which firm continued until the organization of the American Woolen Co. when Mr. Stockton became head of the American's Dept. 2. Two years later Mr. Stockton resigned and with George E. Kunhardt formed the firm of Kunhardt & Stockton. Upon the dissolution of this concern five years later, Mr. Stockton established himself in business under his own name as H. M. Stockton & Co., which it remained until Dec. 1, 1927, with the exception of one year when with Auguste Montant as a partner, the firm name was Stockton & Montant. The business has now been succeeded by Waterhouse & Stockton. Mr. Stockton was widely known through the industry and admired for his ability and friendly personality. He is survived by his widow and two sons, H. Reeve Stockton and T. Earle Stockton.

Charles F. Walton

Charles F. Walton, manufacturer of elastic knit goods, Needham, Mass., died at the Wing Memorial Hospital, Palmer, Mass., April 29, about a half hour after he had been taken there following a sudden heart attack. He was 71 years old and a native of Nottingham, Eng. He is survived by his window, two daughters and two sons, Oliver H. Walton, of Charles Walton & Son, the business founded by his father, and Thomas S. Walton, also a knit goods manufacturer of Needham Heights.

Oswego (N. Y.) Rayon Corp. has added men's rayon underwear to its regular line of women's and children's rayon underwear.

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New Publications

Books reviewed in this column may be obtained from the Bragdon, Lord & Nagle Co., 334 Fourth Ave., New York City.

A GUIDE FOR CONVERTERS: Compiled and published by TEXTILE WORLD, 334 Fourth Avenue, New York. Price $1.

Realizing that there was in existence no classified list indicating the various types of fabrics handled by dyeing, bleaching and finishing plants operating on a custom basis, TEXTILE WORLD addressed to all such plants a questionnaire requesting specific information regarding the types of work done. On the basis of the answers to this questionnaire, TEXTILE WORLD has compiled and published "A Guide for Converters." This is offered particularly for the convenience of converters who are continually in the market for various kinds of finishing work, but it should also prove of value and of interest to the industry at large.

The book is divided into three sections, Section I covering general types of fabrics; Section II, individual operations done; and Section III, individual types of fabrics handled.

Section I includes 16 classifications, comprising such general classes as: Cotton fabrics; rayon fabrics; broad silks; woolen goods; worsted goods; wide goods specialists; mixtures, etc.

Section II includes over 70 classifications, comprising such operations as: Specialized types of dyeing; specialized types of printing; specialized types of finishing; waterproofing, fireproofing and mildewproofing, etc.

Section III includes over 175 classifications. The following headings taken from the beginning of this section indicate the types of classification: Airplane fabrics; alpacas; astrakhans; automobile fabrics; awning stripes, painted; awning stripes, printed; bag cloth; balloon cloth; batiste; bedspreads; bengalines; bindings; bolivias; book cloth; brassiere cloth; brattice cloth; broadcloths; buckrams, etc.

The various classifications in each section include alphabetical lists of mills, with addresses, which are equipped to handle the general or specific types of fabrics indicated; or to perform the specified operations. These entries are keyed to provide further information regarding operations and different types of fibers handled.

This is the first classification of its kind ever prepared and fills a need which has been felt for a long time.

Cotton Yarn Market

(*Continued from page* 183)

it would not seem as though the differential that should exist between the two numbers should be greater than 2c. It is even believed that 41c could be shaded on the higher count if firm offer were made. Hosiery cones in harmony with quotations on other characters of yarn are up. It is difficult to say what the basis is for this type of material. Many in the selling market claim that while it would be difficult, if not impossible, to obtain anything more than a basis of 32c for 10s they have received spinners' prices as high as 33c. It is not certain, however, that this figure would be strictly adhered to if a tempting offer were made.

Influence of Centralization

A good many comments have been heard during the last few months of the influence of the direct seller's attitude on prices. It is admitted the agreement between spinners and yarn merchants has acted in favor of the direct seller. The dealer has been obligated according to his arrangement to maintain the spinners' price and not cut commission. On the other hand, there has been nothing to stop the direct seller from naming as low prices as he felt inclined to. But possibly there is another angle to the cheap figures which have been quoted by the spinner selling direct for his own organization. From the nature of things his activities are confined to comparatively few numbers. His organization works on these counts and does not know much outside of them. It is understandable that with this centralization and with the buyer constantly hammering for lower prices sight could easily be lost of influences affecting the general market and certain specific numbers to the extent that would give no incentive to the direct seller to put his prices up, whereas others handling a wider variety of counts might recognize the justification for increases on these very counts because of the increased price they were receiving on other numbers. How extensive this element is in its influence on the general market it is difficult to say, but it may explain, in part at least, why the direct seller has seen such severe competition during the last few years and especially during the last few months.

Woolen Blankets Bids Opened by Marine Corps

PHILADELPHIA.—Seven concerns submitted bids for supplying the local depot. Marine Corps Quartermaster Department, Broad and Washington Ave., with 10,000 woolen blankets, schedule, May 1. Bids opened were: Clarence Whitman & Sons Co., New York, $3.77 each; Batavia Mills, Inc., New York, $4.899 each; H. D. Lehds Co., New York, $3.824; Springfield Woolen Mills, Springfield, Tenn., $4.375; Farnsworth & Talmadge, New York, $5.495; Chatham Mfg. Co., Winston-Salem, S. C., $4.23; Kent Mfg. Co., Clifton Heights, Pa., $5.55.

Parker Mills Reopen without Change in Status

FALL RIVER, MASS.—The East Warren plant of the Parker Mills which has been closed on account of a strike for the last three months, is to be re-opened on Monday under the same working arrangements as when it was closed, with no increase being made in working hours, no wage reduction enforced and no disavowal made of the union. It is provided in the agreement accepted by mill officials and the union that whatever adjustments are deemed necessary shall be made by a joint committee representing the management and workers.